VOL. 13 JULY, 1939 No. 3

THE PSYCHIATRIC QUARTERLY

RICHARD H. HUTCHINGS, M. D., Editor
CLARENCE O. CHENEY, M. D., Associate Editor
NEWTON J. T. BIGELOW, M. D., Associate Editor
GEORGE L. CANTZLAAR, A.B., Editorial Assistant

PUBLISHED BY AUTHORITY OF THE
NEW YORK STATE DEPARTMENT OF MENTAL HYGIENE
DR. WILLIAM J. TIFFANY, *Commissioner*

The Psychiatric Quarterly, formerly the State Hospital Quarterly, is the official organ of the New York State Department of Mental Hygiene.

Volumes begin with the January number. Annual subscription rate, $2.00 in U. S. and its possessions; $2.50 elsewhere.

Editorial communications, books for review and exchanges should be addressed to the editor, Dr. Richard H. Hutchings, Utica State Hospital, Utica, N. Y.

Business communications, remittances and subscriptions should be addressed to the State Hospitals Press, Utica, N. Y.

Entered as second-class matter April 17, 1917, at the postoffice at Utica, N. Y., under the Act of March 3, 1879.

TABLE OF CONTENTS

PAGE

Constitutional Factors in Psychotic Male Homosexuals. By Hyman S. Barahal, M. D. 391

Psychology of Ideas of Influence. By Morris D. Riemer, M. D..... 401

Aplastic Anemia Arising During Metrazol Treatment of Schizophrenia —Report of a Fatal Case. By Joseph Epstein, M. D..... 419

Metabolic Studies of Mental Patients Treated with Insulin Hypoglycemic Shock Treatment—III. By Meyer M. Harris and Wm. A. Horwitz 429

The Bromide-Permeability Quotient in Mongolism and Epilepsy. By Fred A. Mettler, Ph.D., M. D. 438

The Serum Lipids in Schizophrenia. By Lowell O. Randall, Ph.D. and Louis H. Cohen, M. D. 441

Psychosis with Syphilitic Meningo-Encephalitis (General Paresis) Eight Months After Chancre. By Mark Zeifert, M. D. 449

Psychosis with Psychopathic Personality. By William E. Cudmore, M. D. 457

The Syndrome of Acute (Alcoholic) Hallucinosis. By G. M. Davidson, M. D. 466

Metrazol Therapy in Manic-Depressive and Involutional Psychoses. By Mark Zeifert, M. D. 498

A Theory for the Cause of Deaths in Acutely Disturbed Mental Patients. By Walter A. Thompson, M. D., C. M. 503

Symptoms and Previous Personality in Prison Psychoses. By Samuel C. Karlan, M. D. 514

The Psychic Aspects of Bronchial Asthma. By Robert B. Sampliner, M. D. 521

Disturbances in the Reticulo-Endothelial System During the Course of Metrazol Treatment. By Louis Wender, M. D., and M. D. Epstein, M. D. 534

A Behavior Problem—Runaways. By Ben H. Balser, M. D. 539

PAGE

A Statistical Study of 1,140 Dementia Præcox Patients Treated with Metrazol. By Horatio M. Pollock, Ph.D. 558

Discussion. By Clarence H. Bellinger, M. D. 569

Listening to a Staff Conference. By Joseph Chassell, M. D. 574

Book Reviews 576

Notes 594

CONSTITUTIONAL FACTORS IN PSYCHOTIC MALE HOMOSEXUALS†

BY HYMAN S. BARAHAL, M. D.*

The problem of homosexuality brings to the fore a number of interesting questions. First, is it a normal or abnormal phenomenon? Second, is it a congenital biological reaction, as is intimated when homosexuals are referred to as "degenerates," or is the condition dependent on postnatal, psychologic influences? Third, are there any constitutional variations peculiar to the homosexual, as evidenced by anthropometric studies?

Although this report concerns itself chiefly with the last named problem, that is, the constitutional factors observed in psychotic homosexuals, it would perhaps be of interest to discuss some of the other aspects of the condition.

There is no uniform opinion nor statistics as to the prevalence of homosexuality, first, because of the reticence of the subjects, and second, because of the different views as to what constitutes homosexuality. Davis[1] found that in a group of 1,200 female college graduates, at least five years out of college, slightly more than 50 per cent had experienced intense emotional relations with other women and in slightly more than half of these cases, or 26 per cent of the entire group, the experiences had been accompanied by overt practices. Hamilton,[2] in a survey of 100 married men and 100 married women, found that in the former group 46 and in the latter 23 had had one or more "affairs" with persons of the same sex, which involved sex organ stimulation. Rosanoff's[3] figures are considerably lower when he estimates that two per cent of all men are in a marked degree homosexual, but he states that, if lesser degrees be included, the percentage would rise to five or higher.

It is reasonable to assume that homosexuality would be more common were it not so violently condemned by our present-day culture. That such censure has not always been the case, is shown by Havelock Ellis[4] who relates that the Egyptians showed great admiration of masculine beauty and never regarded homosexuality as punishable, nor even reprehensible. The practice was allowed by law in Crete, in order to keep down the population. It has al-

†Read at the Down-State Interhospital Conference, New York Psychiatric Institute, April 20, 1939.

*The author wishes to thank Mr. William Barnes, Mr. Seth Seiders, and Mrs. Marie Warren for their invaluable assistance in preparing this study.

ways been common among warriors, because of the separation from women that war involves, and it flourished among the Carthaginians, Normans, Dorians, Scythians, Tartars and Celts, in many instances actually being considered a military virtue. In Greece, the practice has historically been condoned and actually fostered.

The frequent occurrence of homosexuality among monkeys, birds, dogs, rams, bulls, and cows,[4] particularly when confined, or in the absence of the opposite sex, brings forth another interesting consideration and is used as a potent argument favoring the view that the practice is not entirely in the domain of pathology.

Sadler,[5] without quoting statistics, concludes that homoerotism is very common under all conditions in which men are compelled to be by themselves for long periods of time. A similar conclusion is reached by Ford[6] in the case of institutionalized females, although no definite figures are given by this author.

Some authorities, including Magnus Hirschfeld and his school, have insisted that the condition is congenital and irreversible, and that the only adequate solution to the problem is legal recognition, without punishment. Krafft-Ebing[7] frequently refers to homosexuals as "degenerates," and in one place states, "An *untainted* male may be raised ever so much like a female, and a female like a male, but they will not become homosexuals. The natural disposition is the determining condition; not education and other accidental circumstances, like seduction."

Such a view is, of course, antithetical to the psychoanalytical concept. Freud,[8] in the Schreber case, and in other contributions, repeatedly correlates the development of homosexuality with postnatal, infantile fixations. He, himself, however, frequently intimates the existence of organic factors in many cases of homosexuality, particularly some disturbance in the little known biological processes related to sexuality.[9]

Other followers of the psychoanalytical school, such as Brill,[10] Coriat,[11] Stekel,[12] Ferenczi,[13] and others, stress the psychogenic factors exclusively, insisting that we are all bisexually constituted normally and that a certain degree of sublimated homoerotism plays an important role in our social relationships.

Other authors assume an intermediate attitude, admitting the presence of constitutional variations in many cases of homosexual-

ity, but, at the same time, stressing the psychogenic factors. Henry and Galbraith,[14] in their study of 123 male mental patients of whom 17 were homosexual in their inclination, found that the average homosexual male has narrow hips, relatively long legs, a deficient growth of body hair, feminine pubic hair, high-pitched voice, and small external genitalia, as compared with the average heterosexual patient. They concluded that these findings signify a retardation in development and differentiation with consequently a preservation and continuation of the boyish form. In a later study, however, Henry[15] places considerable stress on psychogenic factors. Weil,[16] in a study of 380 cases of male homosexuals, found a tendency toward greater height and wider hips, concluding that these were signs of constitutional eunuchoidism or femininity. He used the normals of Weise,[17] computed on 1,000 normal men. Wortis[18] criticizes these findings on the ground that even normal measurements vary widely in different regions and that the above comparison may be unfair. He concludes that there is no evidence that the homosexual represents a specific constitutional type.

The conflicting conclusions reached by various investigators, in regard to body measurements, may be partially due, as Wortis states, to the rather arbitrary use of normals. For instance, the average normal measurements obtained on a group of Germans would not be the same as a comparable computation determined on an average American group, and any comparison between the two would accordingly be misleading. Another factor, which obviously adds to the confusion, is the lack of standardization in measuring. Thus, Henry and Galbraith[14] employ the interspinous diameter in determining the breadth of the hips, whereas, Weil,[16] and Weise,[17] use the intertrochanteric distance. Strecker[19] emphasizes this point in criticizing the report of Piney[20] that more suicides occur in people having leg/body-length ratios of over 50 (the leg being more than 50 per cent of the total body length). He shows that the disagreements among the various authors result from the use of different criteria for measuring the leg-length. Thus, Piney considers the leg-length as the distance between the superior border of the great trochanter to the heel, in the reclining body; Brugsch[21] measures the distance between the sole and the upper margin of the symphysis; Kretchmer[22] measures the distance from the "upper

symphysis to the base''; Clegg[23] does not actually measure the leg-length but computes it by subtracting the sitting from the standing height.

In the present study, 342 psychotic male patients, constituting all the patients on one service, were studied for measurements generally considered significant in gonadal disturbances. The following measurements were determined: the weight, height (in bare feet), breadth of hips (intertrochanteric), width of shoulders (biacromial), length of torso (distance from the suprasternal notch to the anterior superior spine of the ilium), leg-length (distance between the anterior superior spine to the lower border of the internal malleolus), and arm-span. These determinations correspond approximately to those used by the State hospitals of New York.[24] From these measurements were computed the following ratios: hips/height, shoulders/height, hips/shoulders, and torso/leg.

Similar measurements were done on 50 male employees, picked at random, and of approximately the same age range.

Careful observation of the patients over a long period of time, combined with fairly accurate reports by both day and night personnel, revealed that of the group of 342 patients, 37, or approximately 10 per cent of the total, were repeatedly and persistently overtly homosexual in their inclinations. These patients were used for the homosexual group.

Two serious objections may be raised, at this point, to the choice of homosexual cases. First, it may be argued that the mere presence or absence of overt homosexual practices are not true criteria in determining homosexuality, for there may be unconscious homosexual drives which find expression in a more symbolized fashion. However, this would be merely begging the question. On the one hand if we accept unconditionally the psychoanalytical view of the subject, that we are all bisexually constituted, and that overt homosexual manifestations later in life are the result of frustrations or fixations in early life, there is no further need for studying the subject from a psychobiological point of view. However if we are to gain any information from an objective study of the problem we must, even if only temporarily, ignore unconscious sexual motivations and deal only with overt acts. We are, therefore, justified in assuming, for the time being, that the only homosexual cases are

those who are overtly so. The second objection to our choice of material may be that these men are homoerotic only because of long confinement and segregation, and are, therefore, not comparable to a group of homosexuals who are overtly so entirely by choice. However, if we admit that an environmental influence is able to change a heterosexual into a homosexual, further study of the subject from a constitutional viewpoint is automatically precluded. The facts remain that, despite the confinement, only a relatively small percentage of the hospital population is overtly homosexual, and that a considerable number of the cases in our group had shown such preferences even prior to their commitment to the institution.

Results

As can be observed in Table 1, the average age of the 37 homosexual patients was 33 years, of the 305 other patients, 40 years, and of the 50 employees, 37 years. The average weight of the homosexuals was 130 pounds, of the other patients, 134, and of the employees, 157. The average height was 166.9, 167.6, and 172.4 centimeters, respectively. The decidedly greater physical development of the employees used in this study in evaluating the subsequent findings must be kept in mind. It is interesting to note, however, that the average height of the employees corresponded closely to that given by Hooton[25] for native American males, so that, it is to be deduced that the average height of our mental patients is considerably lower than normal. The average width of the hips varied little in the three groups, with a slight advantage in favor of the employees, undoubtedly due to their greater body size. The same applied to the biacromial width of the shoulders. As would be expected from the marked difference in height between the patients and the employees, the latter had a decided advantage in the lengths of the torso and leg. There was, however, no marked difference between the homosexual and the other patients in this measurement except that the former had somewhat shorter torsos. A difference of one or two centimeters cannot be considered highly significant, as it may be produced by even slight postural changes. The arm-span measurements appeared to be quite significant, for, despite the differences in height, both the homosexuals and the other pa-

			AGE		WEIGHT LBS.		HEIGHT (CM.)		HIPS (INTERTRO-CHANTERIC) (CM.)		SHOULDERS (BIACROMIAL) (CM.)		TORSO (CM.)		LEG (CM.)		ARM SPAN (CM.)		RATIO %			
AUTHOR	SUBJECTS	No.	RANGE	AVG.	RANGE	AVG.	RANGE	AVG.	RANGE	AVG.	RANGE	AVG.	RANGE	AVG.	RANGE	AVG.	RANGE	AVG.	HIPS TO HEIGHT	SHOULDERS TO HEIGHT	HIPS TO SHOULDERS	TORSO TO LEG
BARAHAL	MALE HOMO-SEXUALS	37	18-72	33	94-170	130	152.6-178.0	166.9	26.8-33.0	30.1	32.6-42.1	37.4	38.7-52.1	45.1	82.6-102.0	91.2	161.3-182.2	172.8	18.0	22.4	80.1	49.5
BARAHAL	MALE PATIENTS	305	15-77	40	95-196	134	142.0-186.1	167.6	26.3-35.0	30.5	29.0-44.0	37.0	38.1-58.4	47.2	77.5-108.0	91.3	140.5-195.0	172.8	18.2	22.1	82.4	51.7
BARAHAL	MALE EMPLOYEES	50	20-68	37	105-245	157	158.0-188.3	172.4	29.4-35.0	31.9	33.0-44.0	38.3	40.6-55.9	50.4	83.8-102.9	93.1	157.0-187.1	173.7	18.5	22.2	83.3	53.6
WEIL	MALE HOMO-SEXUALS	380						170.87		32.26		38.19							18.81	22.4	84.49	
WEISE	NORMAL MALE	1000						161.09		31.41		39.0							18.79	23.3	80.54	

TABLE No. I

tients nearly equalled the span of the employees, indicating proportionally longer arms in the former. The ratios of hips/height, and shoulders/height revealed no significant findings, with perhaps a slight tendency for relatively smaller hips in the homosexual group. This tendency was more evident in the hips/shoulders ratios, because of the smaller computations involved. However, when we consider that Weise's ratio for the normals corresponds closely to ours for the homosexual group, and that his ratio for the homosexuals is considerably higher than ours for the normals, the computation loses a great deal of its significance. The torso/leg ratios were highest for the employees and lowest for the homosexual group, with the other patients occupying an intermediate position, indicating perhaps proportionately longer legs in the homosexual group, with a similar, but lesser, tendency in the other patients.

A study of the pubic hair distribution revealed that, in the homosexual group, 15 patients, or 40 per cent, and among the others, 85 patients, or only 29 per cent, had a feminine type of distribution. An interesting finding was that of the 18 negro patients, none of whom were homosexual, 10, or 56 per cent, had a feminine type of distribution. There was also present a greater tendency for a scanty facial hair growth in the homosexual group than among the other patients: 9, or 24 per cent of the former, and 49, or 17 per cent of the latter group (Table 2).

TABLE 2

	Total No.	Pubic hair distribution				Facial hair			
		Male		Female		Normal		Scanty	
		No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Male homosexual	37	22	60	15	40	28	76	9	24
Other male patients	293	208	71	85	29	244	83	49	17
Male negro patients	18	8	44	10	56	10	56	8	44

DISCUSSION

The present study might be interpreted as proving that, as a group, homosexuals have a tendency toward relatively long extremities, narrow hips, feminine pubic hair distribution, and scanty facial hair. Since these findings are compatible with the accepted

syndrome of gonadal insufficiency, the problem of treating these cases would be greatly facilitated, were we able to reach unequivocal conclusions from this and similar studies. We could then agree with Wright[26] that homosexuality is an endocrinological problem and curable by replacement therapy. Such a deduction, despite its practical advantages, is unfortunately not borne out by scientific facts. It is quite true that comparative measurements have on occasion attributed certain constitutional characteristics to the homosexual, but these have been so contradictory that, whereas one investigator finds the hips larger than normal, another equally sound study shows them to be smaller than normal. Experience has shown that body measurements are so variable, even in the so-called normal group, that, unless one deals with a definite dysplastic type, such as acromegaly or Fröelich's syndrome, it is impossible to reach any definite conclusions from such measurements. The same applies to other traits and characteristics frequently attributed to homosexuals, such as those pertaining to hair distribution, mannerisms, pitch of voice, and so forth. We frequently encounter homosexual men who, from every physical consideration, are quite virile and masculine in appearance, and conversely, we see individuals who are extremely effeminate in their appearance and makeup, who are anything but homosexual. The author has shown elsewhere[27] that treating homosexuals with the potent sex-factor testosterone not only does not eliminate overt homosexual practices, but actually increases them. It is, therefore, believed that, in our present state of knowledge, we are not justified in assuming a constitutional basis for homosexuality. The mere existence of a constitutional makeup along with homosexual tendencies does not necessarily imply a causal relationship. It may be, however, in occasional cases, that the presence of some of the physical characteristics of the opposite sex may create conflicts predisposing to the maldirection of the libido. Or, if we accept the views of the psychosomaticists, it is quite probable that even changes in body-build may result psychogenically. Menninger,[28] for instance, ascribes the flat chests, narrow hips, and masculine facies of spinsters to an unconscious repudiation of femininity.

Conclusion

1. Thirty-seven psychotic homosexual male patients, 305 other psychotic male patients, and 50 male employees, were studied with respect to various body measurements.

2. As a group, the homosexuals showed a tendency toward comparatively longer extremities, narrower hips, feminine pubic-hair distribution, and scanty facial hair.

3. The significance of these findings is discussed, and it is concluded that there is little evidence that homosexuality is an organic or endocrinological condition.

Kings Park State Hospital
Kings Park, N. Y.

REFERENCES

1. Davis, K. B.: Factors in the Sex Life of 2,200 Women. New York, 1929.
2. Hamilton, G. V.: A Research in Marriage. New York, 1929.
3. Rosanoff, A. J.: Manual of Psychiatry and Mental Hygiene. John Wiley, New York, 1938.
4. Ellis, Havelock: Studies in the Psychology of Sex. Sexual Inversion. F. A. Davis, Philadelphia, 1919.
5. Sadler, Wm. S.: Theory and Practice of Psychiatry. C. V. Mosby, St. Louis, 1936.
6. Ford, C. A.: Homosexual practices of institutionalized females. J. Abnormal and Social Psychiatry, 23:442-448, 1929.
7. Krafft-Ebing, R. von: Psychopathia Sexualis. Physicians and Surgeons, 1933.
8. Freud, S.: Psychoanalytische Bemerkungen über einem autobiographischen beschriebenen Fall von Paranoia: Jahrbuch für psychoanalytische und psychopathologische Forschungen, Vol. III, 1911.
9. Basic Writings of Sigmund Freud. Edited by A. A. Brill, 1938. P. 628.
10. Brill, A. A.: Homoerotism and paranoia. Am. J. Psychiat., 13:954-974, March, 1934.
11. Coriat, I.: Homosexuality. N. Y. Med. J., March, 1913.
12. Stekel, W.: Is homosexuality curable? Psychoan. Rev., 17:443-445, October, 1930.
13. Ferenczi, S.: Contributions to Psychoanalysis. Trans. by Jones, Chapter V, Badger, 1916.
14. Henry, G. W., and Galbraith, H. M.: Constitutional factors in homosexuality. Am. J. Psychiat., 90:1249, May, 1934.
15. Henry, G. W.: Psychogenic factors in overt homosexuality. Am. J. Psychiat., 93:889-908, January, 1937.
16. Weil, A.: Sprechen anatomische Grundlagen für das Angeborensein der Homosexualität? Arch. f. Frauenk., 12:23, 1924. (Quoted by Wortis.)
17. Weiss, S.: Untersuchungen über die Norm geschlechtspezifischer Körperproportionen. Dissertation, Leipzig, 1923. (Quoted by Wortis.)
18. Wortis, J.: Am. J. Psychiat., 93:1121-1125, March, 1937.
19. Strecker, H. P.: The body-length-leg ratios in the general population and in mental hospital patients and its possible significance in suicide. J. Ment., Science, 82:38, January, 1936.
20. Piney, A.: Lancet, 2:972, 1935. (Quoted by Strecker.)
21. Brugsch, T.: Allegemeine Prognostik. Berlin, 1922. (Quoted by Strecker.)
22. Kretchmer, E.: Physique and Character. London, 1925.
23. Clegg, J. L.: J. M. Sci., 81:297, 1935.

24. Outlines for Psychiatric Examinations. Edited by Clarence O. Cheney. State Hospitals Press, Utica, N. Y., 1934.

25. Hooton, E. A.: Quoted in "Queries and Minor Notes." J. A. M. A., 112:1096, March 18, 1939.

26. Wright, C. A.: Further studies of endocrine aspects of homosexuality. Med. Record, 147:449-452, May 18, 1938.

27. Barahal, H. S.: Testosterone in psychotic male homosexuals. To be published.

28. Menninger, K. A.: Somatic correlations with the unconscious repudiation of femininity in women. J. of Nerv. and Ment. Dis., 89:514-527, April, 1939.

PSYCHOLOGY OF IDEAS OF INFLUENCE*

BY MORRIS D. RIEMER, M. D.

The forces that influence man are universal. In the normal individual, reason exerts a most powerful influence. In the abnormal the powers of reason are diminished and other forces usurp their position; of these a set of delusions, known as ideas of influence, are prominent. A somewhat parallel ceding of reason to other phantom influences has repeatedly manifested itself throughout the ages in various recondite practices. In antiquity man relied less upon his powers of reason, but looked for guidance, and was greatly influenced by the predictions and advice of the oracle. In the middle ages astrology was the means of influence employed to determine the choice of enterprise.

This blind reliance upon mystic forces has been curtailed in present-day civilization. However one is astonished by a survey of the innumerable cults and fanatical practices that still influence a substantial proportion of the world population. Most widespread of such present-day influences are spiritualism, occultism, astrology, phrenology, and fortune telling in its many forms: crystal gazing, trance states, and palm, card, and tea-leaf reading. It is a propos to include in the study of one's subjugation to such influences the phenomena of hypnosis, mesmerism, and suggestion. In yielding to these forces, whatever the type of practice, all individuals behave similarly, that is, they seem to yearn for a dominating directing power, and are soothed in the apparent protection and guidance they receive. To this they give in without critical survey, or without reason.

The essential objective of this paper is to demonstrate clinically, the psychology of ideas of influence as it is brought forth in the psychotic patient, and to point out the frequency with which this symptom involves the types of mystic practices that have been enumerated. The very fact that patients use these magical powers in their delusional trends suggests the possibility of an underlying psychology that is not dissimilar.

It is important to define what is meant by ideas of influence. These consist of feelings or ideas that thoughts are given to one;

*Read at Brooklyn State Hospital, December 5, 1938, before the Psychiatric Society of the Rockland, Manhattan and Brooklyn State hospitals and the Psychiatric Institute.

that certain strange powers control the body and mind. It appears to the patient that rays, air currents, telepathy, magnetic or electrical currents, or an apparatus of some kind are the means through which he is controlled or influenced to experience motor and sensory phenomena in the body, sexual feelings, other peculiar or pathological bodily processes, and "foreign" thoughts. Often these induced reactions are considered to be hostile and produced by enemies.

The patient to be presented for a study of these ideas is a divorcee, 32 years of age, who first evinced obvious signs of a mental disorder at 26, when she professed love for her instructor at the university while taking courses in English literature. Her preoccupation with this man produced a progressive estrangement from her husband; she voluntarily left him and her five-year-old daughter in 1933 for a period of 14 months, and procured a divorce in 1937. Throughout this period and since then, she has been subject to strange influences emanating primarily from "her lover," and later from other individuals.

She was born in Brooklyn and is the oldest of three siblings. A brother, three years her junior, is unmarried and considered peculiar. He went to Columbia, obtained a degree in liberal arts and then took up law but discontinued his studies in the last year of the course for no apparent reason. Since then he has had several jobs as salesman outside his home state but is constantly dissatisfied and unable to settle down. He considers himself above any type of employment and is strongly introverted. A younger sister, five years the patient's junior, holds a responsible position as a secretary and is fairly stable. Two paternal cousins are psychotic. These are sister and brother, and their respective diagnoses are dementia præcox, hebephrenic type and dementia præcox, catatonic type.

Her father was occupied most of the day conducting a small department store where his wife assisted him daily. He had no other interests and gave but little attention to her. She cannot remember ever being caressed or kissed by either of her parents. Her father, however, she considers to have been less indifferent than her mother, and she recalls periods when he would display a warm, kindly manner. She felt no urge to confide in her parents, nor

did she feel that they cared to listen. When she was 12 years old her father died of pneumonia. She speaks of a peculiar "feelinglessness" she experienced at the time. She shed no tears, and was relatively unconcerned. Her mother, in a fit of rage, shouted at her one day, "Why don't you show some feeling for your dead father!"

This lack of emotion at the death of a loved one may be considered a most abnormal phenomenon, clearly demonstrable just before puberty in our patient. Usually it is due to a strong undercurrent of hostility which overshadows whatever feelings of love one may have had for the deceased. It has been observed that individuals have even shown outright anger at the death of a parent as if to say, "What right had you, father, to go and leave me?" A peculiar symptom, seen in many neurotics, is an uncontrollable outburst of laughter at a funeral, which bespeaks essentially the same mechanism.

The mother is a simple, indifferent, matter-of-fact person. The patient described her as cold and unaffectionate. Following the death of her husband, her mother seemed to grieve and had frequent crying spells for a period of years, making the home a most unhappy one. The patient made an initial immature attempt to console her mother, as she puts it, by "embracing and cuddling close to her in bed," but after several nights her mother rebuked her severely and said she would have none of this behavior. It may be presumed that this very insecure young girl was pressing anxiously to her mother for a sign of love, for the untimely death of her father had been a severe traumatic deprivation and she needed support. She felt very lonely and reflected much on the unhappiness at home so that her school work became perfunctory and lagging. A few years later she thought seriously of a plan to go to Africa where, she believed, she might be happy.

This fantasy of running away from home often finds expression in truancy in children, and in a strong wanderlust in adolescents. The individual hungrily anticipates finding in the new home or surroundings the love that has been denied her at home.

In her disconsolate state she turned to a young man whom she later married; he was employed in her father's store. He spoke kindly to her and was attentive. Since she was 12 years old he had

seemed to supply the reassurance that her mother had failed to give and, at frequent intervals, she looked to him for advice.

Her mother reports that the patient was a stubborn, domineering child who was often somewhat resistive to orders or requests of others, and insistent upon having her own way. She played with a few friends, but had difficulty making new acquaintances. In school she was disobedient; because of bad behavior she was threatened with nonpromotion towards the end of the third grade. Her conduct suddenly changed the following year when she came under the supervision of a kind, motherly teacher.

About the age of five, just before the birth of her younger sister, she remembers killing a new-born kitten by "hitting it over the head" with a hammer and being about to do the same to another one, when she was severely reprimanded by her friend's mother. At the time, she now says, she didn't know they were animals, but thought "they were just pieces of fur."

This activity, together with the report that she had little to do with her siblings throughout life, is an example of the inordinate hatred she had for her younger brother and yet unborn sister. It was as if this child had vindictively said to her siblings "I receive so little love here in this home and yet you come to take even that away from me."

At 19 she married. Her husband was five years her senior and had begun a successful practice in dentistry. Since her father's death, he had been her constant companion. At times she had felt he was taking up all her time and she should seek other friendship; she told him to keep away one summer and made a final break in their relationship despite his despair and protest. Within a few months, however, they were reconciled. Throughout this time, she had no other companions of the opposite sex, neither did she experience any attraction to other men.

She noted a pronounced change in her husband soon after marriage. He concentrated most of his time and thought on his career. His attitude, which she abhorred, was "to make a big impression," by proper appearance, expensive cars, and lavish entertainment solely for the purpose of increasing his clientele. In consonance with this tendency he behaved affectedly, was always "proper," and dignified. Sensible as she had always been to tender affection,

she felt herself thwarted. She complained bitterly that, although his income was far above that of men of similar age in his profession, he seldom allowed her sufficient money. She was compelled to call regularly at his office to ask for funds. Her husband really represented a protective parent. But he, like her father, paid attention to his business and neglected her—again she could not find the love she incessantly yearned for.

The patient conceived before marriage, and, the day following her nuptials, had an abortion. The foetus was well formed. She noted its features clearly outlined. It was a boy. For many months thereafter, she felt very guilty for not having given life to the child. In order to relieve this feeling, she decided to conceive again, and about two years later gave birth to a daughter. Towards this child she experienced at intervals a sudden compunction of duty, and a strong fear that it might suffer. On one such occasion, upon learning that her daughter had witnessed a scene in which other children exposed themselves to her, she experienced unbearable horror, and immediately moved from the neighborhood. At another time, after she had left her husband and child, she suddenly felt that her daughter was improperly cared for, and brought suit to obtain her custody. There was, however little, if any, affection shown to her child, who was entrusted to the care of the maid.

She felt guilty about her children, no doubt because of her hostility towards them. There appeared to be a repetition of an old trauma, for her own child, as her siblings had done, took away from her the affection that she wanted exclusively from her spouse.

She cannot recall having had any masturbatory sensations throughout her childhood and adolescence. She knew nothing at all about sexual relations until actual encounter. She denies phantasies of a romantic or sexual nature. There has been no overt masturbation since marriage, nor since she left her husband.

For many months prior to marriage she engaged in a partial coital relationship which consisted of a form of external friction of the genitals, in which the male organ was horizontal to the vertical axis of the vagina. She thus experienced pleasant sensations but was not adequately gratified. She was surprised to find that she had become impregnated without entry. Nevertheless this practice was preferred, and carried on for four years after marriage,

there being an intromission on relatively few occasions. She had no orgasm on intromission. There was an absence of any preliminary activities to the sexual act, and insufficient tender feelings towards her mate.

She had kept up a friendship with a young woman whom she had known since childhood. Following the friend's marriage they saw each other often. The two couples would meet at least three times a week for a period of a year and a half. Eventually they became most intimate with each other. Upon meeting, they would regularly and immediately resort to the practice of "changing partners." The exchanged couples would repair to adjoining rooms rooms and carry on "petting parties" in which "everything but actual intercourse" took place. As time went on, there seemed to be "an instinctual need," as the patient puts it, for such stimulation. The latter, however, left her with a strong feeling of frustration. After several months, she submitted to the persistent wooing of her friend's husband, and indulged in clandestine meetings in her own home. Here again, she rarely had an orgasm but felt that the sexual encounter was a little more enjoyable. This continued for a year, when she began to have guilt feelings about her morality. She decided to find out whether her paramour really loved her. When he told her that he still cared for his wife, she suddenly felt exhilarated and free of bondage. Soon thereafter, she terminated these surreptitious meetings. A few months later, she put an end to the mutual "petting parties."

The changing of partners for love-making between two couples is not infrequent. Under cover of a mutual exchange, the actual homosexual craving,which motivates this indulgence, is disguised. On closer inspection, it is obvious that the relationship consists of two women loving one man or vice versa; in other words, one woman loves what the other woman loves; they really love each other through the disguised medium (the man). In addition to this, it gratified the insatiable desire in the patient, to receive greater quantities of parental love.

She had come to several convictions about her husband at this time. She felt belittled in that he had permitted such "goings on," and believed she had no more love for him. Ideas that her husband was less desirable and weaker than her paramour constantly

insinuated themselves into her mind. There was a gradual waning of sexual relations with very little in the last four years of her married life, the patient having gradually developed the delusion that her husband was homosexual.

A constant reaction to be expected from her is the strong hatred, now shown towards her husband and previously to her parents and siblings. This hostility was stirred up when she could not realize her instinctual need for parental love. This narcissism or desire to be loved, is also reflected in her unconscious homosexuality—it being well known that the latter is strongly narcissistic. Her delusion that her spouse is homosexual is a denial of her own inclinations.

About a year before her marriage, at the age of 18, she developed an intense interest in spiritualism. Almost at the start she believed it was possible to communicate with the dead and sought to obtain messages from her deceased father. During the seance she would experience certain visual phenomena, such as the appearance of a fish on the wall or some other symbol which the director of the session interpreted as meaning that her father had spoken to her. Several years later she was also eager to communicate with her dead mother-in-law of whom she had been very fond.

It is apparent that she expected through spiritualism to conquer the lost affection of her father and of a mother substitute who had been kind to her. This, no doubt, is the motive in all spiritualistic seances—for one learns readily that persons who attend such meetings have had very strong attachments to their parents or loved ones, and seek to reestablish their own status of comfort and assurance through belief in contact with the departed one. The mechanism is not unlike that seen in the patient, a strong narcissistic force which may be quelled with difficulty.

Coincident with the time of her sexual transgressions she became preoccupied with her educational shortcomings. Following some alcoholic imbibition on a New Year's Eve, she suddenly declared to her paramour, while in his embrace, that she had definitely decided to enter college to complete her education.

In her usual determined way she matriculated after taking postgraduate work in high school, and then, for the following two and

one-half years took full semester courses in the university towards attaining a degree in liberal arts.

This sudden desire to return to school can only be seen in the light of a gross abnormality. She felt a keen inferiority, as she expressed it, because she believed her education to be insufficient. To allay these distressing feelings she undertook advanced study. Such needs for further education sometimes are seen in individuals in the fifth and sixth decades of life who suddenly decide to go to college. A particular type of student called "der ewige Student" never seems to get through with his studies; further education, in these cases, then may be a narcissistic gratification or means of obtaining protection and love from educators.

The patient became particularly interested in her English instructor. It appeared to her that he was unusually sympathetic and attentive. He asked a few questions about her home life. She had informed him that she was married and had a four-year-old child. Her work progressed very favorably and she received an A for the subject. The instructor seemed to gaze only in her direction while he lectured. Often "it seemed as if no other students were present," that he talked only to her. At a concert at the university her intuition told her "there was someone staring" at her from behind; on turning about she noticed "it was Mr. G." (her teacher). She soon reached the conclusion that he was attracted to her. A relationship of this kind at this time, she reasoned, was not inappropriate, for her husband could not supply her needs and the tie to her recent lover was entirely broken. The attraction was a mutual one, she believed. Because of the instructor's position, however, he could not make definite advances. Perhaps, she thought, he was waiting for her. She decided to leave a note on his desk which read "I shall be glad to see you" and signed it Ruth. The following day, she observed, Mr. G. didn't look at her at all. While discussing a play, he came to a part which read as follows: "Have you no conscience?" and then turned with a fixed stare at her.

The instructor continued to avoid her. She concluded that possibly he was jealous because a male cousin had called for her in class. She arranged to have her cousin write her a letter, stating

who he was, and the purpose of his visit. She sent his note, and one of her own, adding that she no longer cared to attend classes. Mr. G. sent a message through classmates that he wanted to see her. She decided to return after a few days. When she arrived she found "he looked well dressed in a new spring suit." She said "He wore a big smile and set aside all tasks to read to us. He read poetry during most of an hour and a half. It was very beautiful, and he read very beautifully. His voice was soft and the verse romantic. I heard little of it, giddy with its apparent direction towards me."

The delusional ideas of being admired, spoken to in beautiful language or in poetry, in themselves clearly show the great need of this patient to be warmly caressed—in this respect, like the suckling child who is readily soothed by the lullabies and endearments that the protective parents sympathetically provide.

Numerous incidents occurred in which she was certain Mr. G. had purposely arranged to be near her. On one such occasion, while looking through the window, she spied him, facing her in a faculty-building across the way—he seemed to stare in her direction. Several weeks later in a copy of the *Nation* she found the following poem:

"Between us rose a wall of glass
We could not speak, we could not pass
Death cold against my flesh I felt
Crystal impossible to melt
Your lips moved, but I heard no sound
Only . . . . . Underground."

The poem was associated instantaneously with the "discovery" of Mr. G. before the window. Although the poem was signed "Leslie Nelson Jennings," she felt it must be written by Mr. G., under this assumed name. She argued with herself that it was just her imagination, but invariably concluded that the coincidences were too significant for any other interpretation.

Later she noticed poems in *The World-Telegram* and *The Sun*. The verse had obvious reference to her, she believed. The patient said "I was convinced it was he and was far advanced in the opinion that the problems brought up in the communications demanded answering. I visited him and asked to have lunch with him. I asked

him whether he was the author of the verse that appeared in *The Sun*. He said, 'No, I haven't written any verse except at college.' I concluded I was mistaken or he was lying—but the verse continued to have definite connection." The verse, thereafter, made her think she was being asked to marry him.

These ideas of being influenced by her lover through verse occupied her attention for a period of years. They are the most pronounced symptoms in the patient's illness. Her incessant craving for security, finding itself unappeased by the intrusion of reality, sought other methods of gratification. For she had recognized that Mr. G. did not give himself to her; this consummation had to be denied. Her overwhelming, automatic demand for love was obliged to seek ways to destroy this recognition. What more ingenious method could it have devised than her abnormal trend of being cared for in a secret way, that is, through hidden messages contained in verse supposedly written by her suitor? This might be considered a continuation of "the beautiful poetry he had read in class only for her." For a time this ideation supplied her need, but reality again intruded to contradict her convictions. Her credulity had to be maintained and so it was by a modification of her ideas to meet all exigencies.

The verse continued to assure her that he wanted her. She called him on the telephone and, when he said: "What is this all about?" hung up on him. Later the poetry indicated she was to meet him at 4 o'clock one afternoon—she sent him a telegram saying she'd be there, but "no one showed up."

A repetition of her ambivalent behavior followed into every new protective agent she sought and also into her delusions. She was calm, inspired and soothed, when she felt her lover was seeking her; furious with rage and hate, when it appeared he was not.

Her husband took her to Dr. T., a psychiatrist. It was arranged that she be treated three times a week. He returned a packet of letters she had written to Mr. G., saying that he was a friend of Mr. G.'s. She told him the story of her life—about the "petting parties." The next day in the *New York American* she read this verse:

"People who go to petting parties
Get what they deserve, the smarties."

Through this it was clear to her that Dr. T. gave away her secrets to her instructor.

Because of her uncertainty and turmoil she visited a number of fortune tellers. One gypsy told her she would have a second marriage. Another said "I see two men who are concerned about you; they are working hand-in-glove to accomplish a purpose."

The verse informed her "Mr. G. was furious that she had not left her husband." One morning she packed her bag and quietly left home without telling her maid. Her child was at school. She rented a furnished room in the uptown section of Manhattan, and waited for further instruction from the verse. Left without money, she returned in a week to live with her mother. During the following months she obtained employment as a saleslady and, later, as a demonstrator in a low-price department store.

She then discovered that various communications were contained in crossword puzzles; these had to be worked out fully to obtain the message. Another means of sending news was through the "barking of dogs." This, "Mr. G. managed by feeding them meat." She had learned, through these communications, that Mr. G. could not come to her "because he had difficulties about a common-law wife and a son, Donald."

It is appropriate to remark, at this time, on the complete passivity and blind submission she displayed to her ideas. What could be a clearer example of her tremendous narcissistic drive? For, as has already been indicated, her ideas of influence meant only one thing, "I am being loved; now I am secure."

Having lost her suit and an appeal to obtain custody of her child, she returned to live with her husband, as a result of her decision that that was the only way to be with her daughter. From the new messages she received, she was informed that Mr. G.'s common-law wife, Anne, was watching her and "might spoil things." From fortune tellers she had learned how to read cards; this would give her "rapid information in moments of despair."

Her system for reading cards was as follows: The ten of hearts meant evil; the ten of spades, "nervous;" ten of diamonds, money; the ten of clubs, worry, and so forth. Each card had a specified meaning; combinations of cards had implied meanings.

Her visits to fortune tellers and the prediction of her own future through card readings are attempts at reassuring herself. The same principle applies to this art. Fortune tellers well know that those who call upon them seek the relief that a distraught child obtains from the kind, sympathetic mother. Inexperienced practitioners, who may predict calamities, soon learn that older confreres, who dispense only good fortune, have a much better clientele.

About September, 1936, her thoughts took on a more paranoid coloring. The crossword puzzles showed her Dr. T. was trying to get her "muddled in the course of events," and that "the latter and her lover were suing each other because of this." She noticed that police cars were following her—"they were delegated by Dr. T. to watch" her carefully. She felt that "utterly strange things happened." Detectives were using an apparatus that informed them of her every move. While she was in the toilet, men watched her. Trucks passed by at night with young people shouting or singing to annoy her. Automobile horns would blast; when she inhaled "all was still," when she exhaled "there was a blast from a horn" so that she "couldn't gasp but gulped." This "Chinese torture" continued for six months and was the means Dr. T. was using of trying to "drive her insane."

She wrote to the Governor and to the mayor demanding an explanation for the police cars following her. Two men from the mayor's office came to interview her. They assured her the city did not watch citizens with police cars. She became confused and paid her lawyer to find out where Dr. T. was suing Mr. G., and whether the latter had a lawsuit with his common-law wife. The lawyer informed her there were no such actions.

She then came to the conclusion that "the whole theory of it being Mr. G., had cracked down." It was a "frame" "What could it be? Had she been left money?" she asked herself. She thought of the money "they had spent to stop her—they had bought the city, they had bought the papers." She asked herself "Am I crazy?" and reviewed all the evidence apparently supporting it and could find no error in her thinking. She read the cards avidly; they said the woman she called her mother was not her mother. Out of this confusion everything suddenly appeared quite clear to her.

She had been born of wealthy, fine stock, and taken away at an early age from her rightful mother. A tremendous fortune had been willed to her on the condition she bear a son. The numerous molestations were attempts to wear her out so she could not conceive again.

Her ideas, which at first were of a pleasing nature, gradually included less pleasing or hostile influences. The motivation for the latter is a continuation of her very early striving for parental affection. Because of her inordinate narcissistic need, or desire to be loved, and her extreme rage at being thwarted, one who loved her was a kind parent, one who did not, an unkind parent. The hostile ideas of influence merely represent, then, unkind parents who are constantly depriving her of her rights.

In December, 1936, she was admitted to Westport Sanitarium and left in three months. After obtaining the divorce in the summer of 1937, in Reno, she was admitted to Pilgrim State Hospital, where she received insulin treatment, then was transferred six months later to Westport Sanitarium for metrazol treatment. Since July, 1938, she has been cared for at Brooklyn State Hospital.

The reading of the cards, conclusions that her husband was a "dope addict and a homosexual," and guilty thoughts that her unhappy marital state was affecting her child, prompted her to seek a divorce from her husband. Her husband, who had for some time been the image of a protective, all-loving parent, no longer could serve this role. The birth of a child broke up this symbolization for her. This, in addition to his work and social obligations, severely interfered with "having him completely for herself" to satisfy the unappeased infantile desire to be loved. To seek relief, therefore, from a most disconcerting reality, that of being a wife instead of a loved child, she obtained her divorce.

About the beginning of 1937 she began to dwell on ideas of being hypnotized. One evening her skin appeared "to be shriveling" and, at the same time, "a big boot appeared on the wall." At intervals this hypnosis affected her heart, making it beat rapidly; she felt rather fearful. Through a "hypnosis of another type," an Indian patient had managed to mummify her so that "she could not feel anything" and hence was able to resist the attempts of others to give her "heart attacks."

Another phenomenon, called by the patient, the "entering of splits into her mind," has occurred since her hospitalization. She said that Dr. X had explained this to her as "another form of hypnosis." She felt "the mind had a sanity line—if the line were divided into two mental lines, then the part taken away from the main line is called a split. With this split, one could see within the mind of another—hypnotize either another person or oneself." "As for myself," she said, "I could actually experience the presence of a strange line or split, by the actual vision of a face being cast over my consciousness by mental fascination to thought waves." Through the "splits," she learned of a series of annihilating moves, contemplated by prominent figures, to obtain possession of her money. The Governor, Dr. T., officials of foreign countries, she felt, were involved; they had come under the direction of the "frame" to "connive schemes for doing away with her." Feelings of terror seized her at the thought of the inhuman torment to which she was to be subjected. Fortunately, however, Dr. X of Westport, through telepathic means, it seemed to her, came to her aid; he counseled and protected her; it was possible in this way for him to be sexually intimate, producing thereby pleasant sensations.

The "splits" said her mother's name was O'Hara, and that she had been killed by a black spider; that her father was a Jew and the heir to General Motors. At one time a "split" made her feel "as if Christ were entering her body"; at another, that she could perform miracles through her spirit and could attach herself to others. She constantly avers she does not believe the stories or thoughts that enter her mind through the "splits"; she just listens, and, lately, has not paid much attention to them. On questioning she becomes irked because she feels the examiner may think she is convinced of their reality. She does, nevertheless, admit she is hypnotized and the "split" phenomenon is part of the hypnosis. Despite her denial of entertaining any belief in these thoughts, it is interesting to note that she has reacted to them. For instance, she is often in a self-absorbed state. On one occasion, after leaving the sanitarium, she sent a telegram to the Boston board of health to get her birth certificate under the name of O'Hara.

The delusion of being hypnotized is common. Frequently there is a mild attempt to fight off the influence, but the very character

of the process, (here, in the thoughts that the "splits" are also protective) the patient betrays herself as also desiring it. Following out the pattern she has shown since early childhood, the idea of being hynotized can only again be understood as the influence of the parent to whom she is so highly ambivalent. In this respect the actual practice of hypnosis is of a similar nature. Jones,[2] in his article on suggestion, has shown the hypnotist usually represents the parent and exercises a libidinal force on the subject. From the evidence presented, it appears to be a narcissistic libidinal activity. Any experienced hypnotist can readily determine in a group of individuals the person who will make a good subject. The facial expression reveals much of one's character and gives the expert an intuitive feeling that this or that person will readily yield himself to hypnosis. Many neurotic individuals present themselves to doctors and plead to be hypnotized, showing an intense need for being influenced or parentalized. The compliance with which the patient goes to sleep seems to be a sort of enchantment, comparable to that of an infant at the mother's breast, who falls into sweet slumber when he is satiated and secure in the protective arms of the parent.

Freud[1] pointed out that narcissistic difficulties are foremost in the schizophrenic disorders. The evidence brought forth here shows this to be so almost throughout this patient's life. In her childhood she was somewhat negativistic, as shown by her stubborn, dominating tendencies, and misbehavior—often she was "feelingless" towards others. In addition, she displayed insufficient romantic phantasies or sexual feelings throughout childhood and adolescence. She sought, unsuccessfully, in the attachment to a man who was clearly a father substitute, to satisfy her narcissistic difficulty.

Victor Tausk[4] in his article "The Influencing Machine in Schizophrenia," pointed out that the machine in these ideas was a projection of the patient's own body or genitals, and that the ideas revealed the patient was really turning all the libido upon himself, that is to say, he was narcissistic. The ideas of influence brought forth here confirm this, but indicate further that the influencing powers are the parents, who represent the first realizable environment of which the child is cognizant, when it becomes aware of

other objects outside of itself. Narcissism, therefore, would represent an insatiable need for parental love.

Tausk said that "the symptom with the content that thoughts are given to them the patients deduce subsequently from their belief that others know their thoughts. This must be attributed to the infantile impressions originating in an earlier period in life, when the child knows nothing through its own efforts but obtains all its knowledge from others; how to make use of its limbs, its language, its thoughts. At that period all is given to the child; all joy and all sorrow."

In ideas of influence thoughts are given to the patients—but it has been demonstrated that this is exactly what the narcissistic need requires—that everything be given to the individual, that there be no renunciation nor frustration. An analogous reaction is seen in the anxious, hungry infant who cannot tolerate the least delay of its feeding time but grasps eagerly at its hands, clothing or any object in its vicinity to satisfy its reflexive need. Behind the consuming force to be soothed is anxiety; in the patient presented it is seen in her "heart attacks," and fear of being harmed. The narcissistic gratification is to relieve the anxiety. In the schizophrenic, anxiety is seen less frequently than in other neuroses because of the strong narcissistic defense.

The extensive and intensive potentiality of this instinctual tendency, cannot be understood comprehensively, unless one can empathize with the patient, and see that receiving love from the environment, love for the self, is a reaction that is of primary importance, and that practically all activities, finally, are called into the service of this narcissism.

Prior to the outbreak of her psychotic behavior, this woman's narcissism was repressed in her unconscious, and found some outlet in her character traits and sublimated activities. She was secretary of a large organization, an excellent bridge player, and had, for a time, a fair social life.

The etiological factors of her illness are the birth of a daughter and the frustrations she suffered in her marital life. As a defensive measure her narcissism secondarily increased in latitude. Through indulgence in a disguised homosexual activity she sought to drain off the welled-up narcissism. With failure, however, the

latter finally emerged out of repression in the form of delusional ideas of influence.

The final grandiose content of her ideas, that she came from a family of renown and wealth, that she herself possesses magical all-powerfulness portrays clearly the complete self-sufficiency and godliness that intensive narcissism brings. To the infant, the parent is almighty—in his narcissism, he attempts to absorb the almighty parent, to become like him. This, our patient realizes in her psychosis, and acts as if she, through the absorption of the potent parent, has herself become omnipotent. A sense of this all powerful directing force in her ideas of influence, is obtained, when its effect upon her general life is considered.

Illustrative of the similar influencing mechanism is the fact that the patient repeatedly finds hypnosis, or spiritualism a means *par excellence* of expressing her ideas of influence. Individuals who seek such aid are likewise satisfying a narcissistic need. Like the patient, they are eternally trying to find the parent who will strengthen and lead them. From these facts it can only be concluded that many persons, convinced of the phenomena of horoscopy, phrenology or spiritualism, have strongly repressed narcissistic components and probably are suffering from character difficulties. Partaking of their narcissistic needs in a large group, they are less apt to see the unreality of their beliefs and, as a matter of fact, strengthen themselves against feelings of insecurity through the self-assurance obtained in the presence of a group having the same inclinations.

Adolph Stern,[3] studying "a large indefinite group between the psychoses and the transference neuroses, partaking of the characteristics of both but showing frank tendencies in the direction of the psychotic" found that "it is on the basis of narcissism that the entire clinical picture is built . . . normal narcissistic gratification, normal self-preservative needs in the psychic sphere are not adequately provided for. The roots of . . . illness are buried deep in these very early periods of psychic starvation and insecurity due to lack of parental, chiefly maternal, affection." Such a lack of parental affection, as has already been shown, is no doubt the most important factor of this patient's abnormal development. In at least 75 per cent of his cases, Stern says, "the mother was a de-

cidedly neurotic or psychotic type. . . . these mothers inflicted injuries on their children by virtue of a deficiency of spontaneous maternal affection."

This patient, like those studied by Stern, fitted into the borderline group until she showed clearcut psychotic manifestations when her narcissism came out of repression into her delusional ideas. Narcissistic cravings of less magnitude, in many persons, find outlet in the types of practices already mentioned. One must conclude again, as data invariably reveals, that the recognizable basic etiology of narcissistic disturbances lies mainly in the infantile and early childhood milieu of the individual.

Brooklyn State Hospital
681 Clarkson Avenue
Brooklyn, N. Y.

REFERENCES

1. Freud, Sigmund: Psychoanalytic notes upon an autobiographical account of a case of paranoia (dementia paranoides). Collected Papers, Vol. III, Hogarth Press, London, W. C.
2. Jones, Ernest: The action of suggestion in psychotherapy, papers on psychoanalysis. William Wood & Company, New York.
3. Stern, Adolph: Psychoanalytic investigation of a therapy in the borderline group of neuroses. The Psychoanalytic Quarterly, Vol. 7, No. 4, pp. 467-490, October, 1938.
4. Tausk, Victor: On the origin of the "influencing machine" in schizophrenia. The Psychoanalytic Quarterly, Vol. 2, Nos. 3-4, July-October, 1933.

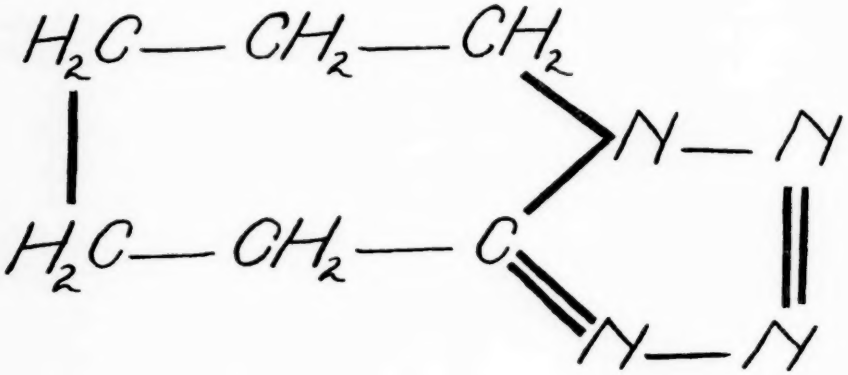
APLASTIC ANEMIA ARISING DURING METRAZOL TREATMENT OF SCHIZOPHRENIA---REPORT OF A FATAL CASE*

BY JOSEPH EPSTEIN, M. D.

In recent years, with the increased use of pharmacological products of complex structure, blood dyscrasias have been frequently described as secondary to the use of such drugs. Generally, such blood dyscrasias were found to be the result of injury to one or more of the hematopoietic functions of the bone marrow. Agranulocytosis has been associated with aminopyrine and similar compounds having the benzene ring,[1, 2] and found to attack the leukopoietic structures of the marrow. Thrombocytopenic purpura has been reported in conjunction with similar drugs, including sedormid.[3, 4] Various leukemoid reactions have also been reported as resulting from the toxic effect of external agents such as phenylhydrazine[5] and sulfanilamide.[6] Aplastic anemia also is known to be associated with drug poisoning, and has been reported as occurring in relation to benzol, arsphenamine and other agents.[7] Clinically, aplastic anemia is a fulminating disease occurring in young people, and running a progressively downhill course for a period of a few weeks or longer. It is usually associated with fever. Study of the peripheral blood shows little or no evidence of regeneration of the red blood cells or granulocytes. The color index may be .8 or higher. There is generally little or no variation in the shape or size of the red blood cells. Platelets are markedly diminished. There is leukopenia of the granulocytes to the point of almost complete absence as the disease progresses, and there is a relative lymphocytosis. There is a lack of normoblasts, megaloblasts, myelocytes, myeloblasts, and other embryonic forms of cells produced by the bone marrow.[8, 9] In addition, there is found an intense anemia; hemorrhagic manifestations of the skin and mucous membranes are associated, and the patient generally appears cachectic, and may show necrotic ulcerations of the tongue and mouth. Pathologically, one expects to find a fatty degeneration and aplasia of the bone marrow.

*From the clinical service of Pinewood, Katonah, N. Y., and Yonkers General Hospital, Yonkers.

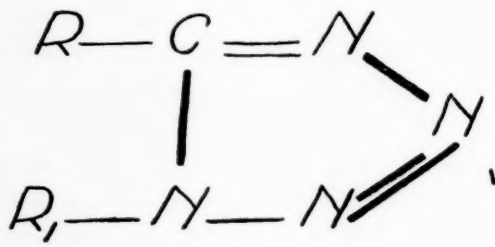
The case which is reported here received metrazol injections for schizophrenia. Metrazol is pentamethylenetetrazol, and does not contain the typical benzene ring such as other hematotoxic drugs.



Pentamethylenetetrazol

(Metrazol)

It belongs to the class of compounds known as tetrazols. These are heterocyclic compounds, or cyclic compounds which contain two or more different elements in the ring. It is represented by the following type formula:



where R and R_1 are various organic groups.

The case which we are describing is, we believe, the first report in the literature of an aplastic anemia occurring in conjunction with metrazol injections.

Case History

The patient was a female, age 18, with a history of a psychosis developing three months prior to her admission. She thought that she was under the influence of witchcraft and that electricity was passing through her. She heard the voices of "saints" talking to her. She developed peculiar mannerisms, walking in a stereotyped manner, occasionally singing or repeating certain phrases. She slept poorly and was quite agitated. The only medication which she received during her illness, prior to admission to Pinewood, consisted of one-fourth grain doses of phenobarbital and, occasionally at night, if she was restless, she received from one to three grains of sodium amytal. Upon admission to Pinewood, her mental condition was definitely indicative of schizophrenia; she heard voices calling to her and threatening to harm her. She frequently became frightened at these voices and became extremely agitated. Prior to the initiation of metrazol therapy, she occasionally received three-grain doses of sodium amytal during her disturbed periods. During the period when she was under metrazol treatment, the only medication given her was Feosol tablets, 1 t.i.d., and an occasional dose of mineral oil or cascara sagrada. Her physical examination showed a swollen, irritated area on the right side of the lower lip at the angle of the mouth. This was due to a habit of chewing and sucking at her lips when she was excited. There was also a mild secondary anemia. Blood examination was as follows: R. B. C., 3,350,000; hemoglobin, 65 per cent; W. B. C., 7,300; differential count: polys, 68 per cent; small lymphocytes, 29 per cent; monocytes, 2 per cent; eosinophiles, 1 per cent. Blood Wassermann was negative; urine analysis gave normal findings; her weight was 105 pounds. She was of asthenic habitus, well formed; heart not enlarged, action regular, no murmurs; lungs normal; abdomen soft; liver and spleen not palpable; no adenopathy; pulse rate 76; blood pressure 126/78. No pertinent previous illnesses.

With the exception of the Feosol tablets, the sodium amytal prior to the metrazol treatment, and an occasional laxative, she received no medication whatsoever. At no time did she receive aminopyrine or any of its derivatives, either during her hospital residence or, as far as could be determined, during the months previous to her admission.

Her metrazol treatment was started December 6, 1938, with an initial dose of 4 c.c. She received treatments regularly thereafter, and as time went on, it was apparent that her mental condition was clearing up. She gained weight, her appetite improved, she slept well, and began to develop insight. She lost her anemic appearance. As a rule, she received her injections three times a week. On four occasions, when the stated dose did not produce a convulsion, she became very excited and noisy thereafter; the injection was, at these times, repeated within a period of one hour with the dosage increased by ½ c.c.

On January 8, one hour after her twentieth treatment, at which time she was receiving 8 c.c. of metrazol per injection, she vomited a small amount of material which seemed to contain several streaks of blood. At this time, when her nasopharynx was examined, it was found that there were several abrasions on the inside of her cheek. Her hard palate, on the right side near the last two molars, had several small lacerated areas, and these seemed to be bleeding slowly. They were wiped off with hydrogen peroxide. It was felt that this bleeding was probably due to her habit of chewing her gums and cheeks, or perhaps secondary to an injury sustained from the mouth gag during a convulsion. I emphasize these bleeding areas, for they may possibly be considered as early focal manifestations of her blood dyscrasia. The patient continued to show progressive improvement as her treatments went on. The vomiting and bleeding were not repeated. It was noted, however, that she drank large quantities of water and seemed excessively thirsty. Urine examination, at this time, showed no sugar or other abnormality. She showed a certain state of well being, began to tell everyone that she was feeling better, took an active interest in her surroundings, and also in occupational therapy work. She no longer expressed her delusions. Occasionally, she would be irritable and tend to become annoying. As a result of her satisfactory progress and the general improvement in her physical condition—she had gained six pounds in weight and appeared quite well—it was decided to terminate her treatments with the production of the sixteenth convulsion. This was induced on January 16, 1939.

At this time she was given 8 c.c. of metrazol. She did not develop a convulsion but became very excited and began to act in a

disturbed and frightened manner. Two hours later, the injection was repeated with 8½ c.c. This resulted in a typical convulsive seizure which lasted about fifty seconds. As she relaxed from the spasms and resumed breathing, it was noted that her respirations were quite rapid. As she was being observed, it became apparent that they were increasing in rate, and that the patient was becoming somewhat cyanotic and showing signs of air hunger. It was also noted that the accessory muscles of respiration were being used. Her pupils were dilated and did not react to light. Her pulse at this time was not palpable at the wrist, and on applying the stethoscope to her chest, the rate was between 180 and 190. At 12:25 which was approximately one hour and ten minutes after the injection of the metrazol, she vomited about 500 c.c. of deep red, bloody material. Shortly before this time, it was noted that many areas over her whole body, including her chest, neck, cheeks, conjunctivae, forearms and legs were showing petechial hemorrhages. These petechial hemorrhages were found either singly or grouped in clusters. Other parts, particularly her forearms and hands, presented large, blotchy, subcutaneous, red areas. It was apparent that she was bleeding both beneath the skin and mucous membranes, and perhaps from her nasopharynx and/or stomach. At 12:45, she vomited more bloody material. By this time, she had regained consciousness and asked for water. She drank avidly, and we allowed her to have 1,000 c.c., within the next half hour. At 1 o'clock, her pulse was 136, and her respirations went down to 26. She was restless and excitable, and was given three grains of sodium amytal and a digitalis tablet. The sodium amytal quieted her somewhat; however, she did not go to sleep, but remained in an excited state. She did not permit anyone to come near her, except to give her water or a pill. She did not permit her temperature to be taken or any procedures to be instituted. Attempts to prick her for examination of her blood were met with such resistance and excitement that it was decided to postpone these rather than risk possible cardiac collapse from exhaustion and excitement. At 2 o'clock, she received three grains of sodium amytal, and at 3 o'clock, she vomited a considerable amount of bloody material. Her nose continued to bleed slightly and there were a number of petechial hemor-

rhages on the buccal surface of her cheeks and pharynx and under her tongue. She complained of severe pain in her throat and tongue. The anterior part of her tongue, both on its upper and lower surfaces, seemed to be desquamating, and gave the appearance of tissue paper. Toward evening, her pulse rate was 108, her blood pressure 112/64, and she seemed to be much more comfortable. However, she still acted in an excitable and overtalkative manner, demanding her clothes, and said she felt better and wanted to get up. She was given three grains of sodium amytal during the night and 3,000 c.c. of fluids. The next morning, her pulse rate was 122, her respiration 26, and she seemed stronger. Toward afternoon, it was noted that her nose, which had oozed blood at intervals during the night, continued to bleed slightly and that her pulse was beginning to mount. By 4 o'clock, her temperature began to rise so that it was 103.5° rectally; her pulse was 150-160, and her respirations were between 35 and 40. It was apparent that further bleeding was taking place. A blood examination at 3 p. m., January 17, showed the following: R. B. C., 1,930,000; hemoglobin, 30 per cent; color index, 0.8; W. B. C., 12,050; blood pressure, 106/60. When these findings were noted, she was removed to a general hospital for a blood transfusion and further treatment.

At 9 the same night, just prior to receiving her transfusion, a blood study revealed the following: R. B. C., 1,880,000; hemoglobin, 28 per cent; color index, 0.77; W. B. C., 14,000; moderate achromia; occasional microcytes; occasional macrocytes; normoblasts, 4 per 100 W. B. C.; 2 band cells; 4 polymorphonuclear neutrophiles; 94 lymphocytes. She was given a transfusion of 800 c.c. of citrated blood.

Her blood study the next morning (January 18, 1939) showed R. B. C., 2,740,000; hemoglobin 50 per cent; color index, 0.92; W. B. C., 4,900. There was an occasional microcyte and macrocyte; there was 1 normoblast per 100 W. B. C.; there were 2 band cells; 11 polymorphonuclears; 77 lymphocytes; 3 eosinophiles; 1 myelocyte; and 6 monocytes.

A blood study the following day (January 19, 1939) yielded essentially the same picture as that of the previous day. At this time a platelet count showed 35,000 platelets per cubic millimeter.

There were no reticulocytes; lymphocytes were now 81, and polymorphonuclears, 13. There were 3 normoblasts and 3 band cells. There were no eosinophiles, monocytes or reticulocytes. Aside from slight anisocytosis, the morphology of the red cells was normal. The patient's temperature, up to this time, had been ranging around 102°, and her pulse around 120. Pentnucleotide therapy was begun January 19 with one ampule that day, and another the following day. At this time, the patient was considerably dehydrated, evidenced particularly by the dryness of her throat, mouth and tongue. She drank large quantities of fluid. She was quite conscious and active, and mildly resistive to treatment. She complained of pain behind her right ear and over various parts of her back. Hemorrhagic spots developed on her gluteal regions over the sites of the injection of the pentnucleotide. She also complained of pain under her tongue and in her pharynx, and it was noted that small, ulcerated, necrotic areas were developing in these regions. Her liver and spleen were at no time palpable, nor was there palpable enlargement of her lymph nodes. The neurological examination was consistently negative. There were no retinal hemorrhages. A tongue culture was reported as containing streptococcus viridans and staphylococcus aureus and albus.

A blood study on January 20 showed red, white, and platelet counts the same as on the preceding day. On the differential count, however, polymorphonuclear leucocytes were now reduced to 4; band cells, 2; and lymphocytes had increased to 86. There were 3 normoblasts and 5 monocytes. Study of the cells showed the presence of toxic granules in the granulocytes and toxic changes in the lymphocytes. A blood study on January 22, showed R. B. C. 2,490,000, hemoglobin 46 per cent. There were 3,400 W. B. C.; 62,000 platelets; there was an occasional microcyte and macrocyte. There were very rare reticulocytes; there were 89 lymphocytes; 4 polymorphonuclears; 2 band cells; 2 normoblasts; and 3 monocytes.

The patient showed no improvement and was becoming weaker. On January 23, she was given her second transfusion consisting of 500 c.c. of citrated blood. On January 26, her blood showed 2,130,000 R. B. C.; hemoglobin, 46 per cent; color index, 1.09; W. B. C., 5,200; 59,000 platelets; very rare reticulocytes; 94 lymphocytes; 2

polymorphonuclears and 4 band cells. The toxic changes continued to be very apparent in the granulocytes and lymphocytes.

At this time the patient was receiving liver extract by injection daily, and was also given Lextron capsules by mouth. Her clinical condition was much worse. During the preceding days, her temperature had gradually risen so that it was now between 102° and 103° and her pulse was varying between 120 and 140. There was occasional bleeding from her nares. At this time, a test for coagulation time showed three and one-half minutes; her bleeding time was two and one-half minutes, and the blood sedimentation rate was 70 mms. in one hour. On January 30, her red count had dropped to 1,600,000 and her hemoglobin to 33 per cent. The color index was 1.03; W. B. C. was 2,200; platelets were 42,000. There were no myelocytes or reticulocytes. She showed 93 lymphocytes, 2 polymorphonuclears, 4 band cells, and 1 normoblast. Her temperature was, at this time, 104°, and her pulse between 140 and 150. She had become semicomatose. Her urine showed a heavy trace of albumin, and many red cells. The ulcerated and necrotic areas under her tongue and upon her cheeks and pharynx had become more extensive. It was also noted that a number of discrete isolated petechial hemorrhages were beginning to reappear over various parts of her body and mucous membranes, including the conjunctivae. On January 31, she received a third transfusion of 300 c.c. of citrated blood. At this time, her white cell count was 2,000 and her hemoglobin 27 per cent. During the next day, the patient became comatose. Her temperature rose to 105°, and she expired.

Comment

The writer has described the case of a patient who was apparently recovering from schizophrenia under metrazol treatment, who during her twenty-fourth injection (which produced the sixteenth convulsion) suddenly went into collapse and developed purpura, both of the skin and mucous membranes. The explosiveness of the hemorrhagic phenomena—arising from and associated with the convulsion—is very significant. It opens the field to speculation as to the pharmacodynamics involved. Following this purpura, there was an associated fever. A morphological study of the

blood showed a progressive anemia with a failure of the bone marrow to regenerate cells. There was a marked reduction, and almost an absence of myelocytes, reticulocytes, and allied cells. There was also a marked thrombocytopenia and an intense granulocytopenia with only an occasional band cell. There was a relative lymphocytosis. Repeated blood smears showed the morphology of the red cells to be essentially normal. Definite toxic changes were noted appearing both in the granulocytes and the lymphocytes. This finding, together with the rapid blood destruction, seemed to point to the presence of a toxic agent in the peripheral blood affecting all its cellular elements. This same toxic factor may also have affected the bone marrow. As the condition progressed, the patient's tongue, cheeks and pharynx developed necrotic ulcerations. There was no enlargement of the liver or spleen. The patient was treated by pentnucleotide and liver injections, and transfusions. The course was progressively downhill, and she expired 15 days after the acute onset of her illness.

An autopsy was not obtained in this case, which is rather unfortunate since it might have assisted greatly in an understanding of the pathology of the condition. The clinical findings and morphological study of the blood point conclusively, however, to the diagnosis of aplastic anemia. In the absence of any other potentially toxic medication during this period, we must feel that this condition, being associated so very definitely with the injections of metrazol, was secondary to and due to the toxic effect of this pharmacological agent.

28 W. 54th Street
New York, N. Y.

REFERENCES

1. Kracke, R. R., and Parker, F. P.: Etiology of granulopenia (agranulocytosis) with particular reference to the drugs containing the benzene ring. J. Lab. and Clin. Med., 19:799, May, 1934.
2. Jackson, H., Jr., and Parker, F., Jr.: Agranulocytosis: its etiology and treatment. New England Jour. Med., 212:137, January 24, 1935.
3. Boas, E. P., and Erf, L. A.: Thrombocytopenic purpura following medication with Sedormid and phenobarbital. N. Y. State Jour. Med., 36:491, April, 1936.
4. Hadarn, W.: Thrombopenic purpura following Sedormid. Schweiz. Med. Wchnschr., 66:1273, December 12, 1936.
5. Heck, F. J., and Hall, B. E.: Leukemoid reactions of the myeloid type. J. A. M. A., 112:95, January 14, 1939.

6. Harvey, A. M., and Janeway, C. A.: Development of acute hemolytic anemia during administration of sulfanilamide. J. A. M. A., 109:12, July 3, 1937.

7. Rhoads, C. P., and Barker, W. H.: Refractory anemia. J. A. M. A., 110:794, March 12, 1938.

8. Minot, Geo. R.: Diminished blood platelets and marrow insufficiency. A classification and differential diagnosis of purpura hemorrhagica, aplastic anemia and allied conditions. Arch. Int. Med. 19:1062, 1917.

9. Smith, L. W.: Report on an unusual case of aplastic anemia. Am. J. Dis. Child. 17:174, 1919.

METABOLIC STUDIES OF MENTAL PATIENTS TREATED WITH INSULIN HYPOGLYCEMIC SHOCK TREATMENT---III

(*Potassium Tolerance Before and After Treatment*)*

BY MEYER M. HARRIS AND WM. A. HORWITZ**

In previous publications[1, 2] we reported upon various phases of metabolism associated with insulin hypoglycemic shock treatment. It was pointed out that marked changes in the level of serum potassium occurred during the hypoglycemic period. Significant differences were found between individual patients which it was felt might be of clinical importance. This paper deals with further studies regarding some phases of potassium metabolism.

It is known that the adrenal glands are intimately associated with the regulation of potassium metabolism in the body.[3, 4, 5] Zwemer and Truszkowski[4, 10] reported that in adrenal insufficiency there is a diminished ability to handle potassium which can be detected by the potassium tolerance test to be described later. It has been reported that marked changes occur in the adrenal glands in experimental animals following prolonged insulin hypoglycemic treatment;[6, 7] furthermore, a number of investigators have been of the opinion that the function of the adrenal glands is in some way disturbed in dementia præcox.[8, 9] Accordingly, potassium tolerance tests were carried out in a group of 20 patients (four of the cases failed to have the second test after a course of insulin shock therapy) in order to determine their initial potassium tolerance and that subsequent to hypoglycemic treatment. It was hoped that such study also might yield information regarding the state of the neuroendocrine mechanisms regulating potassium metabolism.

Procedure and Methods

Potassium acetate in a 10- to 12-per cent aqueous solution, flavored with a little saccharin (one-third of a tablet) was administered orally in the postabsorptive state both before insulin therapy and then again one or two days after a course of insulin treatment. The size of the dose of the salt varied and was equivalent to 20 mgs. of potassium per pound of body weight. The same dose was used

*Read at the Interhospital Conference of the New York State Hospitals held at the New York Psychiatric Institute and Hospital, April 19, 1939.

**From the departments of internal medicine and psychiatry of the New York State Psychiatric Institute and Hospital, New York City.

both before and after a course of insulin treatment irrespective of any change in body weight of the patient occurring during such treatment. Approximately 20 c.c. of venous blood was withdrawn before the administration of the potassium acetate and then again at intervals of one-half hour, one hour and two hours after administration of the salt solution. The blood was withdrawn without stasis and part of it was delivered under mineral oil and another part was oxalated for other studies. The clotted blood was kept in the ice box for one-half hour, was then centrifuged and the serum immediately withdrawn. Special care was taken to avoid hemolysis. The serum potassium of each specimen was determined in duplicate by the Breh-Gaebler method.[11] The blood was analyzed for other metabolites such as inorganic serum phosphorus, amino acid nitrogen and blood sugar. These, however, will not be considered in this paper. Five of the patients were given 3 to 7 c.c. of a 5 per cent solution of potassium chloride intravenously at the rate of about 1 c.c. per minute instead of the oral dose. Blood was withdrawn as in the other test and was similarly analyzed. Observations were also made of the mental state and the pulse and blood pressure during the course of the tests. The spontaneous changes occurring over a period of four hours in the level of serum potassium in a control group were reported in a previous publication.[1] No patient was used if he or she required restraint in order to permit venipuncture.

Observations and Results

(a) *Changes in postabsorptive level of serum potassium*

The postabsorptive levels of serum potassium before and after a course of insulin treatment are given in Table 1. This table includes additional patients from previous metabolic studies for whom these data were available. Of a total of 25 cases, 11 showed a tendency towards a decrease in the postoperative level of serum potassium after insulin treatment; in 13 cases there was a tendency toward an increase; in one case the level remained unchanged. Although the total number of cases studied is still rather small, it may be of interest to note that a larger percentage of the cases improved of the first group in which the postabsorptive level of potassium tended to decrease after treatment. (See Table 2.)

TABLE 1. FASTING LEVEL OF SERUM POTASSIUM BEFORE AND AFTER INSULIN HYPOGLYCEMIC TREATMENT

Case number	Patient	Age	Sex	Duration of illness	Type of dementia præcox	Postabsorptive K level		Condition after treatment	Initial coma dose of insulin—units
						Before treatment	After treatment		
1.	A. R.	30	M	1 yr. 10 mos.	H	19.1	18.5	Imp.	125
2.	C. L.	27	M	4 yrs. 2 mos.	S	19.9	18.2	M. I.	70
3.	M. G.	16	F	2 yrs.	H	18.5	17.9	Imp.	85
4.	R. B.	25	M	2 yrs. 9 mos.	P	19.8	20.1	Unimp.	95
5.	H. G.	16	M	6 mos.	C	20.9	17.3	Imp.	130
6.	R. M.	20	M	1 yr. 3 mos.	S	19.5	19.5	Unimp.	120
7.	I. G.	15	M	4 yrs. 9 mos.	S	17.9	17.4	Unimp.	125
8.	M. M.	24	F	3 yrs. 8 mos.	P	17.2	18.6	Imp.	70
9.	B. K.	18	F	9 mos.	H	19.3	18.7	Imp.	110
10.	H. O.	19	M	9 mos.	S	19.2	17.5	Imp.	180
11.	I. T.	18	M	7 mos.	S	19.6	20.0	Imp.	135
12.	H. J.	31	M	1 yr. 1 mo.	H	17.9	19.3	Imp.	200
13.	E. C.	29	M	4 mos.	H	19.1	18.5	M. I.	90
14.	F. M.	17	F	3 yrs. 3 mos.	?	18.1	16.6	M. I.	80-100
15.	H. F.	16	M	2 yrs. 3 mos.	S	17.6	18.2	M. I.	250
16.	Z. S.	21	F	3 mos.	P	18.3	18.8	M. I.	240
17.	E. B.	44	F	1 yr. 7 mos.	?	19.0	19.6	Unimp.	110
18.	M. P.	23	M	2 mos.	C	18.7	18.8	Unimp.	120
19.	R. M.	22	M	?	?*	19.1	20.6	Unimp.	130
20.	R. R.	16	M	2 yrs.	H?	19.0	21.5	M. I.	400-460
21.	F. R.	33	M	4 yrs. 6 mos.	P	21.9	20.0	M. I.	180-200
22.	F. J.	33	F	1 yr. 5 mos.	P	17.9	lost	M. I.	85-100
23.	C. S.	31	F	2 yrs. 2 mos.	P	19.0	18.5	Imp.	130
24.	H. S.	28	F	9 mos.	H	18.2	20.4	Unimp.	100
25.	L. G.	18	M	1 yr. 2 mos.	H	..	19.6	Unimp.	190
26.	C. S.	22	M	2 yrs. 2 mos.	H	19.8	20.4	Unimp.	210
27.	J. H.	22	F	2 mos.	C	19.7	20.0	Rec.	**

Type of dementia præcox: C=catatonic; H=hebephrenic; P=paranoid; S=simple.
Condition: Rec.=recovered; M. I.=much improved; Imp.=improved; Unimp.=unimproved.
*Psychosis with epileptic personality.
**Recovered before coma occurred.

TABLE 2. CHANGES IN POSTABSORPTIVE LEVEL OF SERUM POTASSIUM AND RELATION CLINICAL COURSE

	Decreased K level		Increased K level		Unchanged K level
	Improved	Unimproved	Improved	Unimproved	Unimproved
No. of cases	10	1	7	6	1
Total number of cases	11		14		
Per cent unimproved.....	9		50		

(b) *Tolerance test.* (Oral administration of potassium)

According to Zwemer and Truszkowski[4, 10] the normal curve should show a rise in the level of potassium in the first hour after the administration of the potassium, and a fall after two hours. It will be seen from Graphs I and II, which present a series of potassium tolerance tests, that before treatment only two of the patients showed any appreciable drop in the level of serum potassium at the end of two hours, the remainder showing either a persistence of the elevated level of serum potassium or a further rise. After a course of insulin hypoglycemic treatment three of the cases (Nos. 16, 25 and 26) showed a tendency toward a tolerance curve which is considered as normal by Zwemer and Truszkowski.

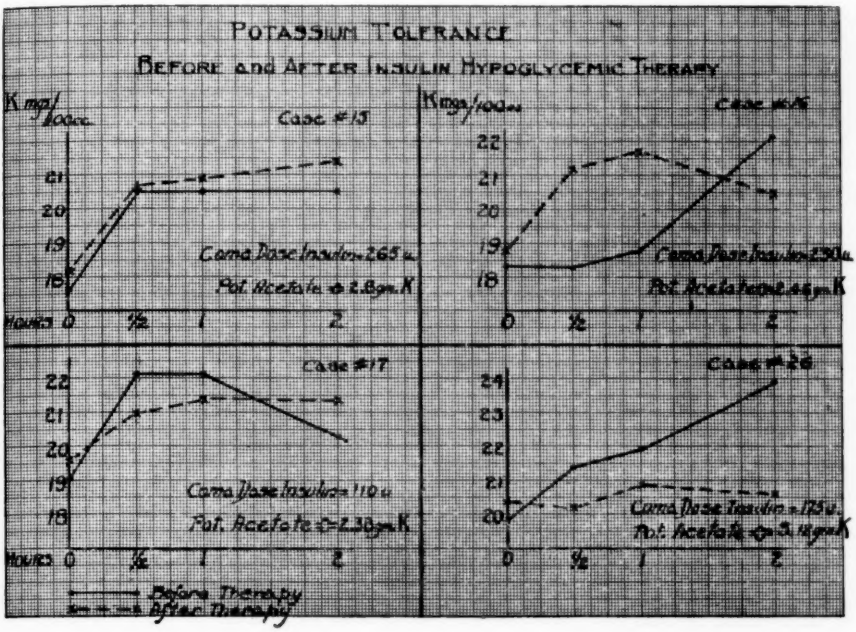
In cases Nos. 17 and 27 following a course of insulin treatment the potassium tolerance curves failed to drop in the two-hour period although they tended to do so before treatment.

(c) *Intravenous potassium chloride*

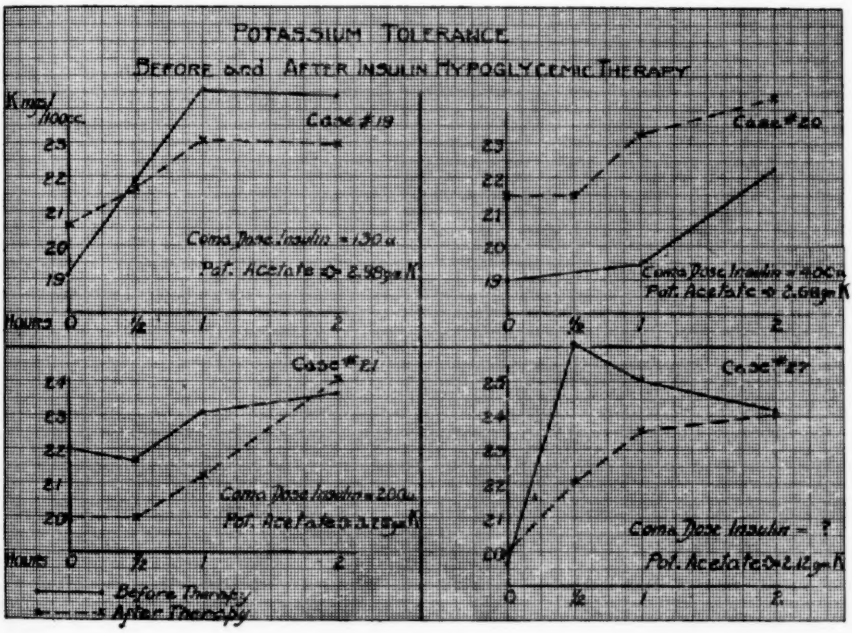
The intravenous injection of a 5 per cent solution of potassium chloride was tried in five cases. According to Semler[12] 10 to 16 c.c. of this solution can be given safely, if injected slowly, and produces a slowing of the pulse in vagotonic individuals and a drop in blood pressure. Three of the cases (Nos. 22, 23 and 24) showed some of these changes, two before insulin treatment and one after a course of treatment. In case No. 22, 5 c.c. administered intravenously produced a further drop in a pulse rate which was initially low, namely from 60 per minute to 50 per minute. This was accompanied by pallor, sweating and drowsiness which lasted about 5 to 10 minutes. The blood pressure went from 116/74 to 92/78. The post-absorptive level of serum potassium of this patient was normal (17.9 mgs. per 100 c.c.) at the time of this test, thus an elevated initial level of serum potassium was not the cause of this reaction. The same dose of potassium chloride after a course of insulin hypoglycemic therapy did not produce any systemic reactions. Although the pulse dropped from 84 to 68 per minute the blood pressure rose from 116/84 to 126/82.

Discussion

The potassium tolerance tests carried out according to Zwemer and Truszkowski showed a diminished tolerance in some of the



GRAPH I.

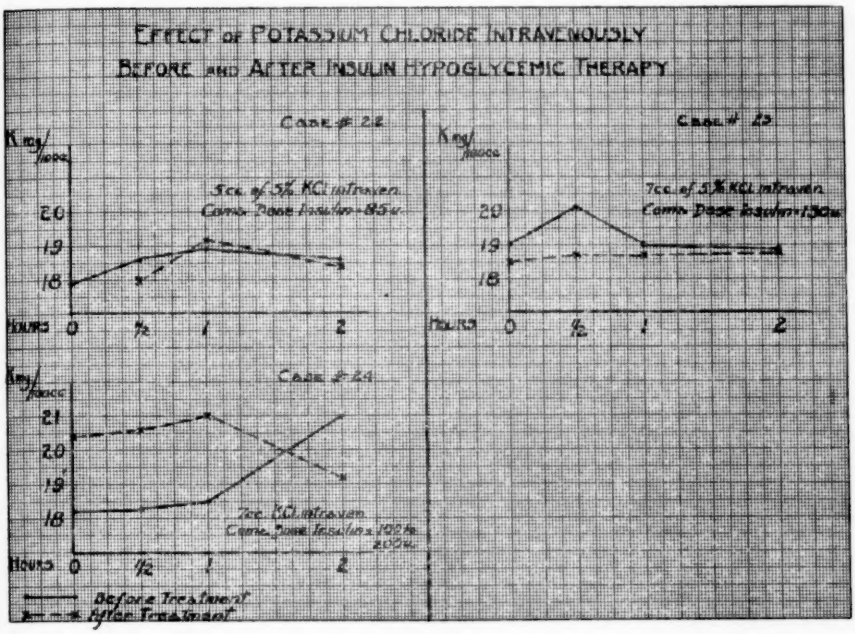


GRAPH II.

cases either before or after a course of insulin treatment, which, according to these authors, might tend to indicate hypofunction of the adrenal cortex. It has been shown, however, that in adrenal cortical insufficiency there is an increased sensitivity to insulin.[13] It will be seen from Graphs I and II that a number of these cases were unusually resistant to insulin requiring from 110 to 400 units as a coma dose. Unless two different factors are present in the adrenal cortex one affecting potassium metabolism and the other the resistance to insulin, one must seek some other explanation than adrenal cortical insufficiency for the findings regarding potassium metabolism. That different substances with important metabolic effects may be present in the adrenal gland has been recently demonstrated by Hartman, et al.[14] They have shown that a separate hormone can be obtained from the adrenal cortex that is responsible for sodium retention and in the absence of this factor cortin will still maintain the adrenalectomized animal. The sodium factor alone was unable to maintain these animals. Whether different factors are present in the adrenal gland for the regulation of potassium metabolism and the production of resistance to insulin may deserve further study.

Case No. 22 reacted to 5 c.c. of 5 per cent potassium chloride intravenously by marked drowsiness, pallor, sweating, and drop in blood pressure—which recalls the reactions observed by Zwemer in cases he considered to be suffering from mild adrenocortical insufficiency. It is of interest to note that in this case too there was no increased sensitivity to insulin. (Coma dose=85 to 100 units.) Irrespective of the mechanisms involved, the tendency to protracted elevation of potassium may be physiologically significant. Winkler and his coworkers[15] found in their animal experiments that there was a critical concentration of about 50-60 mgs. per cent of serum potassium at which death occurred due to cardiac arrest, and that electrocardiographic change occurred between 20 to 30 mgs. per 100 c.c. of serum. The danger which would come from the sudden marked rise in serum potassium due to the ingestion of large amounts of potassium salts appears to be controlled normally so that it does not increase by more than 11 mgs. per cent according to Norn[16] after the ingestion of 12 gms. of potassium chloride. Even in nephrectomized animals it was shown by Norn and also Ingle,

et al.,[17] that potassium rapidly leaves the plasma after intravenous injection of potassium salts. Thus the concentration of potassium in the tissue may increase without being materially reflected in the level of potassium in the blood plasma. These changes in tissue concentration may be physiologically important.[18]



GRAPH III.

It may be of interest to mention a few clinical conditions where the administration of potassium salts in relatively small amounts has produced significant effects. For example in some allergic conditions[19] manifested by urticaria and asthma it has been claimed that amelioration has been produced by the oral administration of potassium chloride. In familial periodic paralysis the administration of potassium has aborted or prevented an attack.[20] In adrenal cortical insufficiency the administration of potassium produces toxic symptoms while a reduction in potassium intake may have an ameliorating effect. In fact it has been shown that even in normal animals kept on a very low potassium diet, if the potassium in the diet is suddenly increased the animal becomes very sick with symptoms simulating adrenal insufficiency.[20] This shows that the nor-

mal organism under certain conditions may not be able to suddenly adjust its potassium regulating mechanisms to an intake of potassium which is ordinarily handled without difficulty.

Attention is called in this connection to the claims of Loehner[21] that in cases of schizophrenia with manifestations of exhaustion there appeared to be an amelioration of some of the symptoms following the administration of adrenal cortex with a low potassium diet.

While it is not possible at the present time to interpret the metabolic findings on the basis of what is known of the physiology of the adrenal glands it is obvious that significant differences exist among patients in the manner in which they handle potassium. These differences are not fixed but may be altered after a course of insulin hypoglycemic shock treatment, some showing an increased tolerance and others no change or a decreased tolerance. Because of the important function of potassium in the physiology of the organism, which was discussed in an earlier paper,[1] it may be desirable to investigate the role of potassium in its influence on therapy, particularly in view of the differences in tolerance which have been observed. The number of cases thus far studied are insufficient to determine whether any correlation exists between the clinical course and the change in the potassium tolerance per se.

Summary and Conclusions

1. The changes in the postabsorptive level of serum potassium of mental patients following a course of insulin hypoglycemic treatment is reported and their possible relation to the results of therapy are indicated.

2. The potassium tolerance test of Zwemer and Truszkowski has been carried out in a group of mental patients before and after a course of insulin hypoglycemic treatment, and the significance of the findings is discussed.

3. The increased sensitivity of some patients to the intravenous injection of potassium chloride is reported and its significance is considered.

4. Further lines of investigation are indicated.

Psychiatric Institute and Hospital
722 W. 168th Street
New York City

REFERENCES

1. Harris, M. M., Blalock, J. R., and Horwitz, Wm. A.: Metabolic studies during insulin hypoglycemic therapy of the psychoses. Arch. Neurol. and Psychiat., 40:116, 1938.
2. Harris, M. M., Blalock, J. R., and Horwitz, Wm. A.: Further metabolic studies regarding the effect of insulin hypoglycemic therapy in mental patients. PSYCHIAT. QUART., 12:489, 1938.
3. Truszkowski, R., and Zwemer, R. L.: Cortico-adrenal insufficiency and potassium metabolism. Biochem. J., 30:1345, 1936.
4. Zwemer, R. L., and Truszkowski, R.: The importance of cortico-adrenalin regulation of potassium metabolism. Endocrinology, 21:40, 1937.
5. Zwemer, R. L.: Electrolyte and sugar determinations as indicators of adrenal influence on normal cell activity. Cold Spring Harbor Symposia on Quantitative Biology, 5:323, 1937.
6. Schenk, F., and Langecker, H.: Uber Gewebesveranderung der Nebennierenrinde des Kaninchens nach chronischer Insulinzufuhr. Endokrinologie, 16:305, 1935.
7. Schmidt, H. E.: Beitrage zur Histophysiologie des Insulins. Schweiz. Arch. f. Neurol. and Psychiat. Erganz., bd. 39:109, 1937.
8. Lewis, N. D. C.: The constitutional factors in dementia præcox. Nervous and Mental Disease Monograph series No. 35. Nervous and Mental Disease Publishing Co., New York and Washington, 1923.
9. Hoskins, R. G., and Sleeper, F. H.: The organic functions in schizophrenia. Arch. Neurol and Psychiat., 30:123, 1933.

   Hoskins, R. G., and Freeman, H.: Some effects of a glycerin extract of suprarenal cortex potent by mouth. Endocrinology, 17:29 and 677, 1933.
10. Zwemer, R. L., and Truszkowski, R.: Factors affecting human postassium tolerance. Proc. Soc. Exper. Biol. Med., 35: 424, 1936.
11. Breh, F. ,and Gaebler, O. H.: The determination of potassium in blood serum. J. Biol. Chem., 87:81, 1930.
12. Semler, R.: Uber die Beinflussung der diabetischen Hyperglykämie durch Kalium. Klin. Wchnschr., 4:697, 1925.
13. Long, C. N. H.: The influence of the pituitary and adrenal glands upon pancreatic diabetes. Medicine, 16:215, 1937.
14. Hartman, F. A., Spoor, H. J., and Lewis, L. A.: The sodium factor of the adrenal gland. Science, 89:204, 1939.
15. Winkler, A. W., Hoff, H. E., and Smith, P. K.: Electrocardiagraphic changes and concentration of potassium in serum following intravenous injection of potassium chloride. Amer. J. Physiol., 124:478, 1938.
16. Norn, M.: Untersuchungen über das Verhaltens des Kaliums im organismus. Skand. Arch. f. Physiol., 55:211, 1939.
17. Ingle, D. J., Nilson, H. W., and Kendall, E. C.: The effect of cortin on the concentrations of some constituents of the blood of adrenalectomized rats. Amer. J. Physiol., 118:302, 1937.
18. Kendall, E. C.: A chemical and physiological investigation of the suprarenal cortex. Cold Spring Harbor Symposia on Quantitative Biol., 5:299, 1937.
19. Bloom, B.: The use of potassium salts in hay fever. J. Amer. Med. Assn., 111:2281, 1938.
20. Pudenz, R. H., McIntosh, J. F. and McEachern, D.: The role of potassium in familial periodic paralysis. J. Amer. Med. Assn., 111: 2253, 1938.
21. Allers, W. D., Nilson, H. W., Kendall, E. C.: Studies on adrenalectomized dogs: The toxic action of potassium. Proc. Staff Meet., Mayo Clinic, 11:283, 1936.
22. Loehner, C. A.: The therapeutic effects of adrenal cortex extract on the psychotic patient. Endocrinology, 23:507, 1938.

THE BROMIDE-PERMEABILITY QUOTIENT IN MONGOLISM AND EPILEPSY*

BY FRED A. METTLER, PH.D., M. D.**

The results presented herewith represent a study made upon 37 normal children, 32 children exhibiting mongolism and 28 heterogeneous convulsive state cases.*** All individuals studied were white. The normal group was tested at the University Hospital in Augusta, Ga. All the fluids were tested in Augusta following shipment in refrigerated vacuum containers from their loci of origin. The results are represented graphically in the accompanying figure.

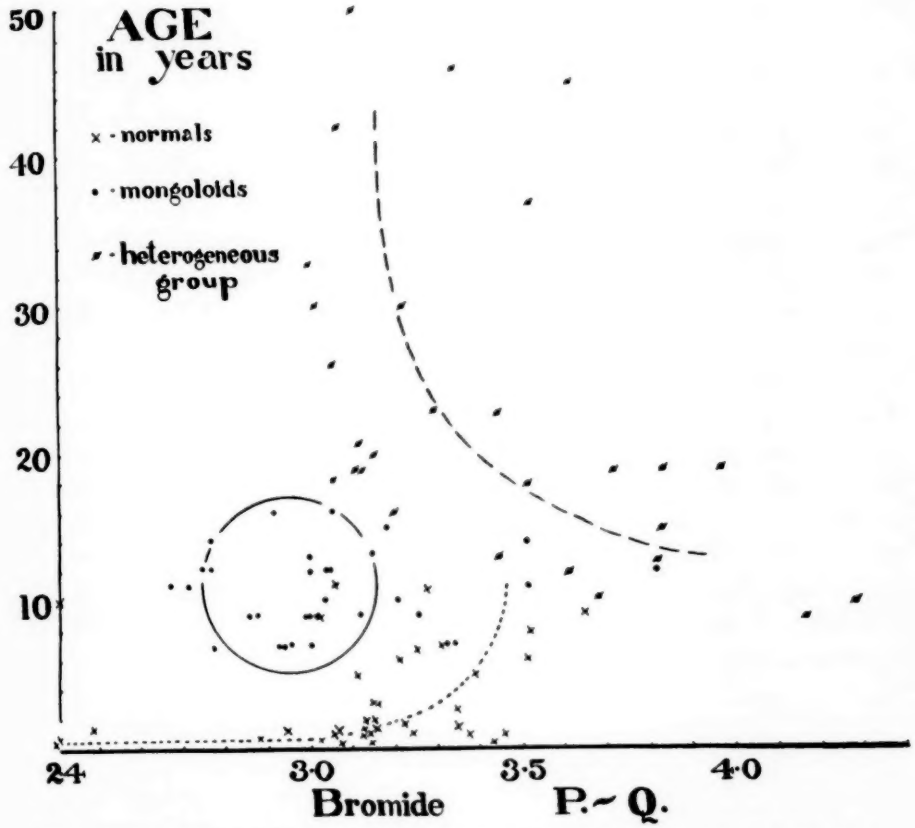
Examination of the figure, which represents the bromide-permeability quotient upon the abscissa and the age in years upon the ordinate, shows a grouping of the majority of the normal cases between P-Q 3.0 and P-Q 3.5. However, it is apparent that the permeability quotient tends to increase normally with age up to about ten years. In charts with larger ordinate intervals this is much more apparent. In the case of mongoloids this age-increase tendency is also observed but the population as a whole occupies distinctly lower abscissa values.

The location of units of the heterogeneous group is extremely diverse but, within it, the permeability quotient is decreasing with age. Since, however, the lower age-bracket cases are rather scanty it would be premature to state categorically that the epileptic begins life with an abnormally high permeability quotient. It will be recalled that as a rule, the epileptic child is not diagnosed until the end of the first decade of life. Within a period of two years study of apparently normal children we have encountered a number of cases with unusually high permeability quotients. None of these children has so far shown any untoward tendency to develop convulsive seizures but of course the period of observation has not been very long. It is by no means impossible that the inversion of the normal age-increase tendency (on the part of the P-Q) is a secondary factor produced by vascular changes attendant upon re-

*Financed through Child Neurology Research (Friedsam Foundation).

**From the department of anatomy, University of Georgia School of Medicine, Augusta, Ga.

***The fluids from the abnormal groups were obtained respectively from Dr. George A. Jervis of Letchworth Village, Thiells, N. Y., and from Dr. N. S. Kupelian of the Pownal State School, Pownal, Me.



COMPARISON OF THE PERMEABILITY QUOTIENTS (RELATED ACCORDING TO AGE) OF A MONGOLOID AND A HETEROGENEOUS (EPILEPTIC) GROUP WITH THOSE OF A NORMAL GROUP

It will be observed that on the whole the permeability quotients of the mongoloid group (represented for the most part within the circle) fell below "normal" ranges. It will be further observed that if the epileptic and normal groups had not been analyzed for age no significant grouping difference would have become apparent. When, however, the age factor is considered it is seen that the P-Q of the normal group tends to decrease (broken line).

peated convulsions. The great difficulty with the interpretation of results obtained by the use of the bromide test in the past has been the spread of the quotients obtained in tested groups. It has been shown[1-5] that the bromide-permeability quotient varies with race, age and previous febrile condition. It is thus necessary to correct such data as are obtained from clinical material by a consideration

of these factors before pathological variation becomes fully apparent. It is therefore only when we recognize that the data shown on the chart for the mongoloids are abnormal for the ages represented rather than absolutely abnormal that we realize the important difference between this group and the normal group. To further clarify this point it is apparent that without regard for age consideration a statement of the findings relating to the mongoloid cases would place the results more or less within normal variation. If one has in mind that as a rule a low P-Q in the normal white probably signifies early age, then the mongoloid quotients can be observed in their true proportions.

Graphing the I. Q. of the epileptic patients against the P-Q was unfruitful. No correlation appeared. If I. Q. and P-Q and age are correlated one finds, upon using these three variables, that the cases falling along the convex edge of the broken line curve (toward the lower left corner of the figure) tend in general to have a higher degree of mentality than those which fall within the concave aspect of the curve (toward the upper right corner of the figure). This circumstance seems however to have no especial significance and is not outside chance possibility.

Conclusions

The bromide-permeability quotient of mongoloids is, as a class, lower than that of normal individuals. Among epileptics the quotient tends to decrease with age while among normal children it tends to increase.

REFERENCES

1. Mettler, Fred A., Robinow, M., Stelling, H. G., Burpee, C. McK., and Amdur, M. K.: Racial variation in the blood-cerebrospinal fluid barrier of normal children. Psychiat. Quart., XI:620-22, 1937.
2. Mettler, Fred A., Stelling, H. G., Robinow, M., and Burpee, C. McK.: A comparison of the blood-cerebrospinal fluid barrier of normal white and negro children. Proc. Amer. Physiol Soc., 50th Ses., pp. 145-6, 1938.
3. Mettler, Cecilia, C., Burpee, C. McK., and Mettler, Fred A.: The effect of fever upon the barrier between the blood and cerebrospinal fluid of children. Anat. Rec., LXX:56, 1938.
4. Mettler, Fred A., Brown, W. R., Robinow, M., and Burpee, C. McK.: Further studies upon the blood-cerebrospinal fluid barrier of normal white and negro children. Proc. Amer. Physiol. Soc., 51st Ses., p. 169, 1939.
5. Mettler, Fred A., Robinow, M., Brown, W. R., and Burpee, C. McK.: The bromide-permeability quotient in normal children. In press.

THE SERUM LIPIDS IN SCHIZOPHRENIA*

BY LOWELL O. RANDALL, PH.D., AND LOUIS H. COHEN, M. D.

Numerous studies have been made on the blood lipid level in schizophrenia, but definite conclusions concerning the differences of lipid level between schizophrenics and normal individuals have not hitherto been possible. The lipid levels are notoriously variable from individual to individual; it is not surprising therefore that inconsistent and inconclusive results have been obtained by various workers. The studies have usually consisted of a comparison of cholesterol, and in a few cases, of total fatty acids. In some investigations a correlation of blood lipid level with various emotional and mental states has been attempted.

From a comprehensive review of earlier literature, Stenberg[19] concluded that a reliable difference between the blood lipid level of schizophrenic patients and normal subjects had not been demonstrated, since most of the studies were based on insufficient material, unreliable statistical evaluation, or faulty technique.

The conclusions reached by Stenberg,[19] Looney and Childs,[11] and Brice[3] are relatively free from these criticisms but those of Duncan,[6] Schube,[15] and Sharpe[16] are not. Stenberg, using Bang's oxidative methods on whole blood, failed to find a significant difference in the lipid level between the total schizophrenic sample and the normal. Looney and Childs, using the colorimetric method of Myers and Wardell on whole blood, obtained results which indicated that the patients had slightly lower values than the normal subjects, but pointed out that when the patients and normal subjects were compared in the same season of the year, no significant difference in lipids was obtained. Brice, using Bloor's methods on serum, concluded that the patients had lower values than did the normal controls but the differences were not statistically significant. These studies indicate that the absolute level of blood lipids in the total schizophrenic population apparently does not differ from that of normal individuals.

However, when the schizophrenic population is divided into "excited" and "calm" groups, a different picture appears. Brice[3] observed higher values for total fatty acids and cholesterol in excited

*From the research service of the Worcester State Hospital, Worcester, Mass.

than in calm subjects. Stenberg[19] considered that the "excited" group of patients had higher values than the normal individuals and that the calm patients had nearly normal values. Brice, however, found that in both types of patients the lipid levels were lower than in normal individuals and, although the calm patients had lower values, these differences were not statistically significant. The differences in the results obtained may be attributed in part to the wide variation in the values obtained on normal subjects.

The present study is concerned with the comparison of the serum lipid values of normal individuals and "excited" and "calm" schizophrenic patients. It was thought advisable to control the factors of sex, chronological age, and duration of hospital residence. It is generally suspected (see below) that the lipid level in females is higher than that of males. Although there is some evidence (Page and coworkers[13]) that chronological age bears no relationship to lipid level, it was thought desirable to control this factor. The objection might also be raised that nutritional factors, associated with more or less prolonged hospital stay, might be operative. Patients were therefore "matched" for sex, chronological age, and hospital stay.*

The group of patients was separated into "excited" and "calm," largely on the basis of the wards in which they resided. The "excited" group was drafted from the disturbed wards; each patient in this group was generally overactive, aggressive, and destructive. The "calm" group was drawn from the quiet and parole wards; these patients were docile and easily supervised and many of them worked in various wards of the hospital or on the farm. Very few of the "calm" group were markedly underactive.

Altogether 85 schizophrenic patients and 42 normal subjects were studied. Of the patients, 44 were male and 41 were female; these in turn were separated into 21 "calm" and 23 "excited" male patients, and 21 "calm" and 20 "excited" female patients. The group of normal subjects was composed of 21 males and 21

*The nutritional index was calculated for the male schizophrenic patients. It was found that the range for the "calm" patients was 68 to 109 per cent of prediction from height and age and for the "excited" patients 74 to 116. Because of the obvious close resemblance, differences in lipid level in our patients cannot be ascribed to nutritional state, although such a relationship may be present under conditions of definite emaciation.

females. These were all members (nurses and attendants) of the hospital staff. All subjects were free of physical disease and had had no medication for at least two weeks preceding the study.

Method

Two blood samples were taken from each subject at an interval of a week. The serum was extracted with alcohol-ether by Bloor's method. Phospholipid and total lipid were determined by Bloor's methods.[1, 2] Total and free cholesterol were determined by Turner's modification of Okey's method.[21]

Results

The data obtained are summarized in the table. The means and standard deviations for the various serum-lipid fractions of the three groups—"calm" schizophrenic patients, "excited" schizophrenic patients, and normal controls—are presented. The data are divided according to the sex of each group. These statistics were derived from the two weekly determinations for each subject.

Means and Standard Deviations of Serum Lipids in "Calm" and "Excited" Schizophrenic Patients and Normal Controls

	Sex	No. of cases	Total lipid mgm/100 cc. Mn.	Total lipid mgm/100 cc. St. dev.	Phospholipid mgm/100 cc. Mn.	Phospholipid mgm/100 cc. St. dev.	Total chol. mgm/100 cc. Mn.	Total chol. mgm/100 cc. St. dev.	Free chol. mgm/100 cc. Mn.	Free chol. mgm/100 cc. St. dev.	Free chol. Total chol. Mn.	Free chol. Total chol. St. dev.
"Calm"	M	21	433	63.0	174	31.1	167	26.4	45.4	9.3	27.1	3.0
patients	F	21	466	81.0	204	31.0	167	38.3	46.1	14.1	27.4	2.7
"Excited"	M	23	561	92.3	221	32.5	189	33.4	56.2	13.2	29.6	3.2
patients	F	20	591	75.5	241	37.3	203	29.9	60.2	9.8	29.7	3.1
Normal	M	21	507	72.9	214	35.8	186	29.6	51.8	11.2	27.7	2.1
controls	F	21	565	65.5	238	25.0	195	20.8	52.8	7.1	27.0	1.9

St. dev.=Standard deviation. Mn.=Mean.

Sex differences. A consistently higher lipid level for the female subjects than for the male subjects may be seen to obtain in all three groups. Tests for the significance of these differences, however, showed that only the differences in mean levels for phospholipid and total lipid in the normal group, and for phospholipid in the "calm" schizophrenic group were statistically valid.* An ap-

*The data were subjected to an analysis of variance by the biometrics department and the significance of differences was tested by use of F ratios; a probability of less than .05 was considered significant.

parent sex difference in blood lipids was also observed by Stenberg,[10] who found that the serum cholesterol and total fatty acids were higher in female schizophrenic patients and normal subjects than in the males of these groups. If the apparent sex differences noted in the present study are valid, considering the number of cases studied, they would be of interest in connection with results of other recent studies of fat metabolism. Deuel and coworkers[5] found that normal women have a higher level of fasting ketonuria than men; female rats and guinea pigs which have been fed acetoacetic acid have a higher ketonuria than males; and female rats, fed on a high fat diet, have a higher liver fat and ketonuria than males, data which were taken as evidence of a more labile liver fat in the female. Campbell[4] also observed in guinea pigs which had been treated with ketogenic anterior-pituitary extracts a greater fat deposition in the liver of females than of males. The higher blood lipids in the females of this study may presumably be related to higher liver fat and ketonuria, and may perhaps be considered indicative of a faster rate of fat metabolism.

Differences Between "Calm" and "Excited" Patients. The mean values indicate that the "calm" schizophrenic patients have a lower lipid level than either the "excited" schizophrenic patients or the normal subjects. The analysis of variance showed that these differences in mean values for all the lipid fractions were highly significant statistically. The analysis of variance also indicated that no significance could be attached to the apparently higher mean lipid values in the "excited" schizophrenic subjects than the normal controls. These results corroborate those of Stenberg and of Brice who found that total fatty acids and cholesterol were higher in the excited than in the calm type of patients. They agree also with those of Brice which indicate that the "excited" patients have lipid levels near the normal value, and that the "calm" patients have depressed lipid levels. They run counter to the view of Stenberg that calm patients have nearly normal values and that the excited patients have significantly higher lipid levels than the normal. These differences may be attributed to the variation in control values obtained on normal subjects. Our values, calculated in the same manner, are in agreement with those of Brice but are considerably higher than those of Stenberg.

Calculations of the neutral-fat values indicated that these fractions of the blood lipids showed only random variations. These data, therefore, are not included in the table. The cholesterol ratios were higher in the "excited" schizophrenic subjects than in either the "calm" patients or the normal controls, but close agreement was noted in the latter two groups. Since Sperry[18] proved that this ratio is a constant among normal subjects, regardless of the variation of total cholesterol, a disturbance of the ratio may be taken as evidence of metabolic disorder. Our ratios for normal subjects are in close agreement with the ratios obtained by Sperry. The "calm" patients who have low cholesterol values show normal ratios of free to total cholesterol, but in the "excited" patients, who have normal or slightly high mean total cholesterol levels, the ratio is disturbed.

Discussion

It seems quite clear from these data that there is a marked difference in the serum lipid level of normal individuals and "calm" schizophrenic patients. Such a difference cannot be explained on the basis of sex, chronological age, or duration of hospital stay since these factors were controlled in the selection of the patients. The explanation seems to rest upon metabolic changes which may be characteristic of schizophrenia; these observations may perhaps be further indication of defective oxidative processes which Hoskins[6] has recently emphasized as frequently noted in schizophrenia.

The question arises, however, why the lipid values manifested by "excited" schizophrenics are normal or perhaps greater than normal. Two possible answers suggest themselves. One is that the nature of the schizophrenic process in "excited" patients is physiologically different from that in "calm" patients. This explanation can go no further at this time since there is little cogent evidence which bears upon such a possible difference in other physiological variables and within the general frame of which the present data might be included. It is also possible that the "emotionality" of the "excited" schizophrenic is associated with a rise in lipid level from that of the "calm" schizophrenic so that the values come to approximate those of normal individuals. This explanation leads directly to the controversial field of physiological

changes under conditions of "emotionality" and more specifically, to the problem of whether or not under such conditions there is an associated hyperlipemia.

The results obtained on animals which have been experimentally excited may be relevant in this connection. Lyons[12] observed that the experimental excitation of cats by being tied to a board or by exposure to a barking dog produced an emotional hypercholesterolemia of 25 to 30 per cent within 20 to 40 minutes. There was a return to the normal cholesterol level within an hour. Sympathectomized animals did not show this response. Katz and Nice[9] also observed a hypercholesterolemia in rabbits which were stimulated by electric shocks. Himwich and Fulton[7] observed a rise in blood fatty acids in cats and dogs which were emotionally excited; however, the titrimetric method used for determining fatty acids has been severely criticized (Long and Venning[10]).

That emotional reactions may influence various blood constituents has been indicated by the results of Tod and Jones[20] who found that the hyperglycemic index and choline esterase activity of blood were higher in "excited" psychotic patients than in the "calm" types. They were of the opinion that these reactions might be a means of measuring emotional states. Data obtained by us (unpublished) on the choline esterase activity of the patients used in the present study did not indicate that this blood constituent could be a measure of "emotionality" since the means for the "excited" and "calm" groups did not differ significantly.

The insulin hypoglycemia treatment has been shown to raise the serum lipids in "calm" schizophrenics; furthermore, for those patients who underwent a remission following treatment the lipid values remained higher than for those who did not.[14]

Summary and Conclusions

The serum lipid levels of 85 schizophrenic patients have been investigated under conditions designed to control variations due to differences of sex, chronological age, and duration of hospital stay. These patients were divided into groups of "excited" and "calm," and compared with 42 normal subjects. Although the absolute lipid levels were higher for women than for men in both the

schizophrenic and the normal groups, the relative differences were maintained irrespective of sex.

The results indicated that in the "calm" group of schizophrenic patients the lipid levels were lower than those of normal individuals and that in "excited" schizophrenic patients the lipid levels were practically the same or slightly higher than in the normal subjects. The conclusion may be drawn that if the level of lipid in the blood is a measure of the rate of lipid metabolism in the body, the nonexcited type of schizophrenic patient, as a group, must have a subnormal rate of metabolism and that such a dysfunction is obscured by the changes associated with "excitement."

Worcester State Hospital
Worcester, Mass.

REFERENCES

1. Bloor, W. R.: The determination of small amounts of lipid in blood plasma. J. Biol. Chem., 77:53, 1928.
2. Bloor, W. R.: The oxidative determination of phospholipid (lecithin and caphalin) in blood and tissue. J. Biol. Chem., 82:273, 1928.
3. Brice, A. T.: The blood fats in schizophrenia. J. Nerv. and Ment. Dis., 81:613, 1935.
4. Campbell, J.: Anterior pituitary extracts and liver fat. Am. J. Physiol., 116:24, 1936.
5. Deuel, H. J., Jr., Hallman, L. F., and Murray, S.: Studies on ketosis. XI. The relation of fatty livers to fasting ketonuria in the rat. J. Biol. Chem., 119:257, 1937.
6. Duncan, A. G.: The serum cholesterol in mental disorders. J. Ment. Sc., 76:284, 1930.
7. Himwich, H. E., and Fulton, J. F.: The effect of emotional stress on blood fat. Am. J. Physiol., 97:533, 1931.
8. Hoskins, R. G.: Oxygen metabolism in schizophrenia. Arch. Neurol. and Psychiat., 38:1261, 1937.
9. Katz, H. L., and Nice, L. B.: Changes in the chemical elements of the blood of rabbits during emotional excitement. Am. J. Physiol., 107:709, 1934.
10. Long, C. N. H., and Venning, E. M.: The alleged increase in plasma fats after the injection of epinephrine. J. Biol. Chem., 96:397, 1932.
11. Looney, J. M., and Childs, H. M.: The blood cholesterol in schizophrenia. Arch. Neurol. and Psychiat., 30:567, 1935.
12. Lyons, C.: Emotional hypercholesterolemia. Am. J. Physiol., 98:156, 1931.
13. Page, I. H., Kirk, E., Lewis, W. H., Jr., Thompson, W. R., and Van Slyke, D. D.: Plasma lipids of normal men at different ages. J. Biol. Chem., 111:613, 1935.
14. Randall, L. O., Cameron, D. E., and Looney, J. M.: Changes in blood lipids during insulin treatment of schizophrenia. Am. J. M. Sc., 195:802, 1938.
15. Schube, P. G.: Blood cholesterol studies in mental disease. Am. J. Psychiat., 12:355, 1932.
16. Sharpe, J. S.: Lipid metabolism in mental disorders. J. Ment. Sc., 80:75, 1934.
17. Shaw, B. H., and Sharpe, J. S.: The significance of cholesterol in cellular oxidation and its bearing on mental disorders J. Ment. Sc., 77:53, 1931.
18. Sperry, W. M.: The relationship between total and free cholesterol in human blood serum. J. Biol. Chem., 114:125, 1936.
19. Stenberg, S.: Psychosis and blood lipids. Quantitative variation of total cholesterin and fatty acids in the blood. II. In dementia præcox. Acta Med. Scand., 72:1, 1929.

20. Tod, H., and Jones, M. S.: Studies on carbohydrate metabolism in nervous and mental disorders. II. A comparison of the hyperglycemic index and choline esterase activity in anxiety and depressive states. Edin. Med. J., 44:46, 1937.

21. Turner, M.: A simplification of the Okey method for the determination of cholesterol by oxidation of the digitonide. J. Biol. Chem., 92:156, 1931.

PSYCHOSIS WITH SYPHILITIC MENINGO-ENCEPHALITIS (GENERAL PARESIS) EIGHT MONTHS AFTER CHANCRE

BY MARK ZEIFERT, M. D.

The elapsed time between the date of infection and the onset of symptoms of general paresis has been given a good deal of study, but an examination of the literature reveals a diversity of opinion which is amazing for a disease of its frequency.

Thus Noyes[1] gives a range of 10 to 30 years as the incubation period between the primary infection and the appearance of paretic symptoms. Other authors consider the time interval to be 10 to 15 years (Brain[2]), 5 to 20 years (Henderson and Gillespie[3]), 3 to 36 years (White[4]), 10 to 20 years (Strecker and Ebaugh[5]), 5 to 15 years (Wechsler[6]), 5 to 10 years (Henry[7]), 8 to 12 years (Bell[8]), 3 to 5 years (Kirschbaum[9]), 3 to 7 years (Robertson[10]), and 16.7 years (Mattanschek and Pilcz[11]).

Moore[12] found an incubation period of 19.5 years in cases without previous treatment and 15.3 years in cases treated prior to the development of neurologic or psychiatric symptoms. Hopkins[13] writes that the symptoms of tabes and dementia paralytica are now appearing at increasingly shorter intervals after the date of infection and reports a mean incubation period of 19.54 years in a series of 52 untreated and of 15.32 years in a series of 65 treated cases.

Wile, Poth and Barney[14] found that the elapsed time between date of infection and onset of paretic symptoms in the older group of patients varied from 2 to 42 years and averaged 15.6 years. An onset of symptoms within five years was found in 13 out of a total of 359 of these cases. The elapsed time in the 77 cases in the younger group (under 30 years of age) varied from six months to 13 years and averaged 5.34 years. The authors do not state whether the date of the primary lesion in the case with the six-month incubation period was determined from the history of the patient, from clinical signs or from dark-field examination. For that matter, a majority of the other authors referred to in this paper do not give a clear statement as to the type of evidence which was used in the determination of the date of the primary syphilitic lesion. In studying a disease which is as deceptive as syphilis, it is necessary

to lay down rigid criteria for the establishment of incubation periods. This is even more important when mention is made of cases with an unusually short period. Nothing less than actual visualization of the treponema should be accepted as evidence of the initial chancre.

The following case is reported because of the extremely short period of incubation between the chancre as proven by dark-field examination and the onset of the psychosis with syphilitic meningo-encephalitis (general paresis).

Report of a Case

W. B., (1868—57560) a native-born male, aged 34, handyman and laborer, was admitted to the Brooklyn State Hospital in August, 1937. Both family and early personal history were negative for mental disorder. He attended school to the eighth grade, joined the Marine Corps for two years, and then enlisted for four years with the Coast Guard.

His medical record is definite and specific. As a marine he was treated for a fractured clavicle in October, 1920, and his Wassermann was negative. He was hospitalized for malaria in a marine hospital during October, 1921, in the Dominican Republic, and his blood Wassermann again was negative. In January, 1922, he received treatment for chancroid, the blood Wassermann still being negative. Two months later, March, 1922, he was hospitalized for acute tonsillitis and a Wassermann taken at this time was negative. In July, 1922, he was again in a marine hospital for a heel injury and the routine blood Wassermann was again negative. Five years later, March, 1927, at another marine hospital, he was receiving treatment for gonorrheal urethritis. A blood and spinal fluid examination for syphilis was negative at this time. The records of the U. S. Coast Guard show no abnormal behavior or defect of judgment on the part of the patient during his period of service.

Subsequently he worked as floorscraper, laborer, and handyman; more recently as a W. P. A. laborer. He has been a moderate drinker and smoker. His makeup is described as "quiet, seldom irritable, friendly and a good husband." He married in 1927 and eight pregnancies resulted. Six of the issue are living and well. One terminated at one month, another at four and one-half months.

His wife had been taking treatment for syphilis five months prior to our patient's admission.

On December 1, 1936, discovering a penile sore, he sought treatat a municipal hospital. Dark-field examination was positive for treponema pallida, but serological examination was negative at that time and 12 days later. The diagnosis recorded was "paraphimosis and primary syphilis." A course of antiluetic therapy was given.

It was observed that he "worried" frequently, and two weeks before admission he suffered from severe headache. Believing that dental extraction would improve this, he entered the general wards of Kings County Hospital July 28, 1937, and had seven extractions. He demanded more removals, wanted all his teeth pulled. When this was refused he became anxious, depressed and threatened to jump from the window. He said that no one wanted to speak to him. This necessitated transfer to the observation ward, where he was tearful, complained of severe headache and stomach trouble, was untidy, dull, confused and took no interest in his surroundings. His blood Wassermann was negative and the spinal fluid reaction markedly positive with both antigens, August 4, 1937. The gold curve was 3344322100. A blood and spinal fluid examination repeated three days later resulted in a doubtful serum Wassermann reaction (1+ with crude antigen and 2+ with the cholesterinized). The spinal fluid results were identical with the previous examination. The deep reflexes were more pronounced on the right side. He talked irrationally at night, was depressed and expressed ideas of futility. He was worrisome, dissatisfied, exhibited poor reasoning and had periods of emotional instability colored with suicidal tendencies. There was a brooding mental state mixed with somatic delusional complaints. He said:

> I am too constipated for four days. My bowels don't move. My teeth bother me. My eyes are sore. I have headaches and my stomach makes me feel so sick. I have been worrying about my condition. The teeth bother me terribly. Last night they played that radio in the other ward and I started to raise the devil. I didn't care where they sent me. Last night I felt so upset with my sickness, and that man was annoying me with the radio that I said I would be better off if I jumped out of the window.

He was admitted to this institution on August 14, 1937. Physical examination revealed a few palpable cervical and inguinal lymph glands. There was a healed scar on the penis. Both pupils reacted sluggishly to light. The consensual reaction was sluggish and the reaction to accommodation diminished. The Romberg was negative. The Babinski was negative. Vision was 20/20 in each eye and the fundi were normal. On August 17, 1937, the complement-fixation test for syphilis was 4 plus. The Kline test was positive with a quantitative index of 32. The spinal fluid complement fixation test was 4+ while the Kline test revealed a quantitative index of 24. There were 100 cells per c. mm. of spinal fluid. The Ross-Jones test was 1+. The colloidal gold curve was 0044443320, while the colloidal mastic curve was 15554.

Mental examination revealed a clean, neat and cooperative white male about 34 years of age. He made few spontaneous remarks. His chief topic of conversation was his desire for treatment. He was especially concerned about his wife and children. He repeated the story about his plea for more dental extractions, and the refusal of the physicians to grant his request. He stated further that during an argument with his wife, when she visited him at the hospital, he threatened to jump out of the window if she did not persuade the physicians to permit him to leave the hospital. He claimed he was sent to the observation ward "for making bad threats." Sensorium was good. He was correctly oriented for time, place and person. Both recent and remote memory were good. He had a good general knowledge and performed well in counting and calculation. His abstract conceptions and retention and recall were good. There was slight slurring of speech. Although he admitted being "a little nervous," he denied mental disease. He denied ever having had a chancre, but admitted having received antiluetic treatment " for about one year." He thought he had been sent to the hospital to have his teeth and his headaches treated.

Shortly after his admission it was observed that the patient became more unhappy. On several occasions he was observed to weep. He denied delusions and hallucinations at all times. Later he became more depressed and agitated, and expressed a great

many fears regarding his future. His emotional reaction was blunted. The sensorium became mildly impaired. Six days after admission he was inoculated intravenously with 5 c.c. of tertian malarial blood. Twenty-four hours later the temperature rose to 103° F. and he thereafter ran a classical malarial course until the fever therapy was concluded by oral administration of quinine, 17 days later. In all he had 11 paroxysms and 156 hours of fever. A course of treatment with bismuth and tryparsamide was then administered.

The patient's subsequent course in the hospital was uneventful and on October 16, 1937, he was paroled for one year to the custody of his wife. At the time of parole he stated that he felt fine. He thought it might be wise to stay in the hospital and finish his treatment, but felt that he was needed at home to support his family. He said he appreciated his care here but believed he was "shanghaied" to the hospital from the general hospital because he threatened to jump out of the window, "but," he added, "I didn't mean to do it. I was nervous then and I wanted to do something for my teeth." There were no complaints about his teeth or stomach at the time of parole.

During the parole period his wife had another miscarriage. On June 6, 1938, his blood and spinal Wassermann were 4+. The colloidal gold curve was 2211000000. The Ross-Jones test was 1+. The right pupil was larger than the left and both pupils reacted sluggishly to light and accommodation. The external ocular movements were normal. The knee-jerks were hyperactive, the elbow-jerks decreased. The Romberg was negative.

During the patient's frequent visits to the parole clinic, he made a good impression throughout, although he was unable to obtain work and had to be maintained by the emergency relief bureau. He was finally discharged from parole on October 15, 1938, his condition being noted as "much improved." The patient presented no abnormal trends at the time of his discharge and was pleasant and agreeable. However he denied that he had either suffered from mental illness or that his luetic condition was responsible for his admission to the state hospital. He insisted that he went to the hospital because of poor teeth. His sensorium was intact.

Comment

One does not often have contact with a psychiatric case in which the anamnestic data are as clearly supported by documentary evidence as occurred in this case. For purposes of discussion and proof of the point involved, we are fortunate in having at our disposal the medical records of this patient's frequent admissions to federal hospitals, where the recognition of syphilis is developed to a high plane, with the result that a proven negative Wassermann is recorded on each occasion. Apparently, even when the patient contracted chancroid and later on, gonorrhoea, he managed to avoid syphilis.

Later he did contract lues and we fortunately have proof of the etiology of the penile sore in the positive dark-field examination. At that time the complement-fixation test was negative and remained negative for a period of eight months. Then when the spinal fluid gave a strongly positive reaction, the reaction of the blood was still only 1+. Two weeks later the blood reaction became 4+ and in addition to this spinal fluid reaction, there was supporting evidence in the high Kline test index, the positive globulin reaction, the increased cell count, and the strongly suggestive colloidal gold and mastic curves. These laboratory findings along with the neuropsychiatric picture give undoubted evidence of the extremely short incubation period between the stage of chancre and the stage of paresis in this case.

That the lesion was not a mucocutaneous relapse (chancre redux, monorecidive, recurrent chancre) or gummatous recurrence (pseudochancre redux) following a primary lesion at the time chancroid was diagnosed, seems evident from the following facts. Stokes[15] states that "infectious relapse is largely concentrated into the first two years of the infection or after the cessation of treatment." The most delayed monorecidive in his experience occurred five years after the primary lesion. In our case the chancre occurred 15 years after the chancroid. In addition this case did not receive antisyphilitic treatment prior to the appearance of the present lesion. Again, Stokes[15] found that relapse "tends strongly to be Wassermann-positive at the onset" and that "the demonstration that the Wassermann reaction is positive in a supposed reinfection

less than a week old is strong evidence in favor of relapse." Here, we find the serologic reaction remaining consistently negative up to the time of, and for some time after, the appearance of the chancre. The occurrence of the spinal fluid positivity shortly before the serum shift from negativity is simply an expression of an inherent variation in sensitivity of the complement-fixation test.[16]

It remains only to show that this was a case of general paresis rather than an acute syphilitic meningitis. To establish this, the writer points to the absence of fever and nuchal rigidity, the absence of turbidity and the comparatively low cell count[15] in the spinal fluid, and the positive paretic colloidal dispersion findings.

A search of the literature reveals no previous case report in which an incubation period as short as eight months is actually substantiated by demonstrable laboratory data. That such cases are unusual is unequivocally conceded by the author, but from the public health point of view, it is just such cases as this that call attention to the importance of early spinal fluid examinations for the detection of general paresis. This is especially true in treated cases, where negative blood reports may mislead the physician into considering the disease completely under control, yet the patient's condition requires active treatment with malaria and tryparsamide. That such a possibility is real, is demonstrated by the recent work of Wiener and Derby[17] who showed that a large part of the syphilitic reagin in the spinal fluid of patients with neurosyphilis is formed locally.

Summary

1. The literature on the incubation period of general paresis has been reviewed.

2. A case of general paresis with a proven incubation period of eight months has been presented.

3. It is urged that spinal fluid examination be done early in the course of the disease so that cases such as the one described here may receive early fever treatment.

Brooklyn State Hospital
681 Clarkson Avenue
Brooklyn, N. Y.

REFERENCES

1. Noyes, Arthur P.: Modern Clinical Psychiatry. W. B. Saunders and Co., Philadelphia, Pa., 1934.
2. Brain, W. Russell: Diseases of the Nervous System. Oxford University Press, London, 1933.
3. Henderson, D. K., and Gillespie, R. D.: Textbook of Psychiatry. Oxford University Press, London, 1932.
4. White, William A.: Outlines of Psychiatry. Nervous and Mental Disease Publishing Co., Washington, D. C., 1932.
5. Strecker, E. A., and Ebaugh, F. G.: Practical Clinical Psychiatry for Students and Practitioners. P. Blakiston's Son and Co., Inc., Philadelphia, Pa., 1935.
6. Wechsler, Israel S.: Textbook of Clinical Neurology. W. B. Saunders and Co., Philadelphia, Pa., 1932.
7. Henry, George W.: Essentials of Psychiatry. The Williams and Wilkins Co., Baltimore, Md., 1938.
8. Bell, E. T.: Textbook of Pathology. Lea and Febiger, Philadelphia, Pa., 1938.
9. Kirschbaum, W.: Ztschr. f. d. ges. Neurol. u. Psychiat., 137:552-559, November, 1931.
10. Robertson, George M.: The prevention of insanity. J. Ment. Sc., 72:299; 484, October, 1926.
11. Mattanschek and Pilcz: Quoted by B. Buckley Sharp in Neurologic Effects of Syphilis. (p. 28.) Oxford Medical Publications, London, 1933.
12. Moore, J. E.: Modern Treatment of Syphilis. Charles C. Thomas, Springfield, Ill., 1933.
13. Hopkins, H. H.: Incubation period of clinical neurosyphilis. Arch. Neurol. and Psych., 29:158, 1933.
14. Wile, U. J., Poth, D. O., and Barney, B. F.: Dementia paralytica and tabes: A study with reference to precocious development. J. A. M. A., 105:1329, October 26, 1935.
15. Stokes, John H.: Modern Clinical Syphiology. W. B. Saunders and Company, Philadelphia, Pa., 1934.
16. Derby, I. M.: Personal Communication. March 20, 1939.
17. Wiener, A. S., and Derby, I. M.: Site of origin of syphilitic reagin in spinal fluid of patients with neurosyphilis. Proc. Soc. Exper. Biol. and Med., 38:487-489, 1938.

PSYCHOSIS WITH PSYCHOPATHIC PERSONALITY

A Study of Eighty Cases

BY WILLIAM E. CUDMORE, M. D.

In this study an attempt is made to obtain a general orientation of the problem rather than an intimate view of the individual psychopathology.

A survey of the records disclosed that during the 10-year period ending June 30, 1937, there were admitted to the Buffalo State Hospital, 80 patients diagnosed psychopathic personality; 77 of these were with psychosis and 3 were nonpsychotic. Forty-five were male and 35 female. From their records the life history of each patient, including the course after leaving the hospital and the present status as of April 1, 1939, were tabulated. Where necessary and possible the case records were augmented by additional facts from both original and other sources of information.

For clarity the material is presented under the following headings: Birthplace, race, order of birth, medical history, parental background, school adjustment, work adjustment, sex adjustment, police contact, previous institutionalization, hospital adjustment, subsequent adjustment and present status.

TABLE 1

	Per cent
(a) Distribution according to nativity:	
Native born	85
Foreign born	15
(b) Distribution according to race:	Per cent
Slavonic	11.25
Italian	8.75
German	8.75
Hebrew	6.25
English	5.
Irish	2.5
African	2.5
Mixed	55.
(c) Distribution according to order of birth:	Per cent
First	13.75
Middle	51.25
Last	20.
Only child	12.5
Unknown	2.5

In this group of 80 patients, 85 per cent were native born. Seven races were represented, but 55 per cent were of mixed race; no one race accounted for more than 11.25 per cent. It is a common impression that the only child, or youngest child, faces greatly increased hazards in his adjustment, yet this study showed that but 12.5 per cent of the group were only children, while 51.25 per cent had older and younger siblings.

Personalities of parents are evaluated under two headings, namely: stable, and unstable or antisocial. By stable it is meant that both parents were well adjusted within themselves, to each other, to the family setup, and to society. The term unstable or antisocial covers a wide range of conditions. First, there is the simple personal maladjustment causing friction in the home with its consequent feeling of insecurity in the child. Then there is the type of marital dissatisfaction where the emotions are too strongly focussed on the child, leading to an overprotective parental attitude. Last is noted frank psychotic conduct, alcoholism or criminal activity in the parents. Incestuous relationship involving the patient is noted in several of the histories. The following is a sample of the malignant parental influences to which one patient was subjected:

The father is described as being emotionally unstable, abusive to his wife and two children, and a poor provider. The mother and father separated when the patient was three years of age. The mother left the home and the patient was cared for by friends until she was nine years old. At this time the father remarried, the patient going to live with her father and stepmother. After four years in this situation the father took the patient and went to live with another woman in an immoral house, where the patient from the age of 14 was persuaded to work as a prostitute.

TABLE 2. FAMILIAL BACKGROUNDS

		Per cent
(a)	Personalities of parents:	
	Unstable	65.
	Stable	32.5
	Unknown	2.5
(b)	Status of homes:	
	Parents separated before patient was aged 15 years	5.
	One or both parents dead before patient was aged 15 years	22.5
	Foster-home care before patient was aged 15 years	10.

Of this group, 27.5 per cent are products of homes broken either by the death of a parent or separation of the parents before the patient was 15 years of age. Foster-home care before reaching this age characterized the background of 10 per cent.

A history of psychosis, epilepsy or known mental deficiency was found in the families of 25 per cent.

Physical conditions or deformities occurring before the history of psychopathic conduct were found in 16.25 per cent of the patients. They were as follows:

Syphilis	1
Infantile convulsions	1
Meningitis	1
Hydrocephalus	1
Traumatic paralysis of an arm	1
Traumatic loss of an eye	1
Anteriopoliomyelitis	2
"Brain fever in infancy"	2
Head injuries	3

Examination of the school adjustment showed that 55 per cent of the group made a poor emotional adjustment in school in that they had difficulties with fellow students or with teachers. Only 37.5 per cent of the group had less than eighth grade education. Where indicated, psychometric examinations, employing the Stanford Revision of the Binet-Simon test, were made using the 16-year level as 100. Fifteen per cent of the patients had an intelligence quotient of less than 100; in these instances the quotients ranged from 78 to 96. Two patients had quotients of 115 and 117, respectively.

In the occupational field the group made a very poor record, as indicated in Table 3.

TABLE 3.

School adjustment:	Per cent
Poor emotional adjustment	55.
Good emotional adjustment	45.
Less than eighth grade	37.5
Graduate eighth grade	17.5
Less than high school graduate	23.75
High school graduate	8.75
Less than college graduate	8.75
College graduate	3.75

I. Q. less than 100—15 per cent

Occupational adjustment:	Per cent
Good	13.75
Poor	71.25
Not employed	12.5
Unknown	2.5

Confirmed drug addiction was found in 7.5 per cent, and 25 per cent of the group were addicted to alcohol to the extent that it interfered with their social and industrial adjustment.

A survey of the sex adjustment of the group showed 41.25 per cent single; 58.75 per cent were married. Of the single patients, 36.67 per cent had no apparent sex difficulties; 30 per cent were so promiscuous as to come in conflict with society; and 33.33 per cent indulged in overt homosexual practices. Only 4 per cent of the married patients made a reasonably good adjustment. Separations or divorces occurred in 53 per cent of the marriages.

The records show that 65 per cent of the group have come into conflict with the police authorities. One patient had 17 arrests for juvenile delinquency by the time he reached the age of 16 years. From the age of 16 to 25 he had 17 more arrests, on charges ranging from disorderly conduct to petty larceny, forgery and extortion. Eight times he was sentenced to a county penitentiary and to Elmira Reformatory, on one occasion for three years. Of these 80 patients, 10 per cent had been in juvenile corrective institutions; 18.75 per cent had been in county jails or other penal institutions for more than six months; 42.5 per cent had previous admissions to State hospitals. One man has been admitted six times, first when he was 16 years old; 2.5 per cent of the group had residences in State schools but were soon discharged as being unsuitable. In evaluating the reason for commitment to the hospital over one-half the patients had been in conflict with society, 38.75 per cent in conflict with the family, while in only 10 per cent of the cases was the conflict of a purely personal nature. It was found that only 50 per cent of the patients were antagonistic to State hospital care. In 15 per cent delusions played a prominent role in the psychosis, and 11.25 per cent were hallucinated.

The duration of hospitalization varied strikingly between male and female patients. The average hospital residence of the male patients was five months, that of the female, 19 months. The aver-

age for the group was 11 months. Seventy-seven per cent of the group remained in the hospital less than one year. The time of hospitalization ranged from 10 days to eight years. Five per cent of the patients were paroled by elopement.

An attempt was made at a followup study of all the patients who had left the hospital. The average time elapsing since discharge was four years, three months; the range being from one year to 11 years. Of the total number of cases studied, 12.5 per cent of the patients had adjusted well. In the group of maladjustments the most serious conflict was with society in 25 per cent, followed closely by family conflict in 18.75 per cent. Of the entire group 7.5 per cent remained in the hospital where another 8.75 per cent died. Five per cent died by suicide. The subsequent course of 10 per cent of the group is unknown. The present status of the group is shown in Table 4.

TABLE 4

Subsequent course:	Per cent
Well adjusted	12.5
Personal maladjustment	3.75
Family maladjustment	18.75
Social maladjustment	25.
Family and social maladjustment	13.75
Continued in hospital	7.5
Died in hospital	8.75
Unknown	10.

5 died by suicide

Present status:	Per cent
In society	58.75
In state hospital	8.75
In hospital for criminal insane	3.75
In corrective institutions	3.75
In veterans' hospital	1.25
Dead	13.75
Unknown	10.

An attempt was made to find a common denominator for the 12.5 per cent of the patients, 10 in number, who have made a good adjustment subsequent to hospitalization. Of this group, nine were native born, one was foreign born. But one was an only child. No two belonged to the same race. Six came from unstable parentage. One of the group lost the father by death when four years of age while one lost the mother by separation when three years of age.

In two there was a psychotic family history. Six were female and four male. In only one was there a history showing an untoward physical condition, that being infantile convulsions.

The school and occupational adjustment had been good in exactly half of this group; half remained single. Two of the five single patients had presented no sexual problems, while only one of the five married persons had made a good adjustment. Only two had had no conflict with the police. Five had had no previous institutional history. Three had previous residences in State hospitals. One was cared for in a juvenile correctional institution, and one in a penitentiary under a sentence of from 8 to 20 years.

Reasons for commitment did not show any uniformity. One was admitted voluntarily. Suicidal threats or attempts were recorded in 4 of the 10 patients. Excitability and irritability were mentioned in five of the histories. Three of the 10 patients were delusional while only one displayed hallucinations. Of this group the residence in hospital was uniformly of short duration, ranging from one month to eight months with an average of 2.8 months. The length of time these patients have been out of the hospital varies from one year to eight years with an average of five. The subsequent adjustment of these patients was examined in an attempt to find the reasons for good adjustment.

Case Presentations

Patient 1 was a 19-year-old boy who just before admission to the hospital had lost a leg in falling from a freight train on which he was stealing a ride. Subsequent to parole he was aided by the New York State Rehabilitation Association and by the Jewish Welfare Society. They have given him both social and financial assistance so that he is now in his final year in the study of pharmacy.

Patient 2 has become interested in religion, which seems to have given him the stability which he formerly lacked. The family is interested in helping him but not more so than they did prior to his admission.

Patient 3 found work on his own initiative, has had no difficulty and from his rather small wages has saved a considerable sum.

Patient 4 received no outside help except the guidance afforded him by the hospital during his parole period. For the past several

years he has been employed as a long distance truck driver giving satisfactory service, and is making a good social adjustment.

Patient 5 contracted a fortunate marriage with an older man of considerable means. The combination of the parental surrogate and financial security appeared to be the stabilizing factor.

Patient 6 separated from her husband immediately after leaving the hospital and has secured good employment for herself. When last seen she was stable, contented and useful to society. While she has had numerous marital difficulties, her case history shows her to have had much difficulty prior to marriage so that the separation does not wholly account for the improvement in her adjustment.

Patient 7 was paroled to the custody of her relatives who, being understanding, assisted her financially until she found steady nursing work. Prior to admission, however, she had done nursing for years in similar circumstances.

Patient 8 was paroled to her husband. There were no children and both patient and husband have been gainfully employed for the past eight years. Prior to hospitalization there had been considerable marital friction. Her environment has been the same since hospitalization as before.

Patient 9 was having marital difficulty prior to admission. Immediately after she left the hospital she and her husband were divorced and soon afterward she remarried. For several years she has made a good adjustment with her second husband.

Patient 10 was the third in order of birth of six children. She was intellectually brighter and more attractive than her siblings. She was the favorite in her family and was petted and indulged. Her parents had great ambitions for her along scholastic lines. She, however, did not make a good adjustment in school and discontinued her studies much against her parents' wishes. She refused to help with the housework at home and would put forth no effort to find gainful employment. In fact she refused to accept positions which others found for her. When not given her own way she reacted with irritability and displays of temper. She always evaded work and responsibility. She married when 20 years of age and her husband continued the overprotective attitude instituted by her parents. She refused to accept the responsibility of

caring for her home and feigned illness to avoid working. This meager adjustment broke several months after the birth of her child. She attempted suicide by taking an overdose of sleeping medicine and again by taking iodine. She was very irritable and overtly rejected both her husband and her baby. She remained in the hospital only 10 days. Since her parole in March, 1932, to her husband, she has assumed full care of the home, has given birth to two more children, and accepts full responsibility for the care of her three children. Her relationship with her husband has been uniformly pleasant.

In five of the cases presented here there was no change in the environment after the patient left the hospital, as compared with the previous environment. It is then perhaps reasonable to assume that in these cases hospitalization produced a change within the patient.

One of the five developed a strong transference to a physician in the hospital and accepted him more or less as an accessory superego. Of the four others in this group none reacted in a particularly favorable manner to psychotherapy and no definite reason can be educed for the evident change in their personalities. It is perhaps significant that all 10 patients who made a good subsequent adjustment showed a much better than average ability to adjust in the hospital as witnessed by the short duration of their hospitalization.

Conclusions

1. Nativity and race are not significant factors.

2. From the study it would appear that the "only child" does not face as great a hazard as is commonly supposed.

3. Parental instability with its attendant poor development of the superego is a common etiological factor.

4. Diseases or deformities were found in only a small percentage of cases.

5. Psychopathic traits appear early in life as witnessed by poor school adjustment.

6. Psychopathic persons make a very poor occupational record.

7. Persons of psychopathic personality are extremely poor marital risks.

8. Conflict with police authorities and institutionalization are very frequent.

9. Duration of hospitalization is relatively short.

10. Only a small percentage of the psychopathic persons are benefited for any great length of time by treatment in a State hospital.

Buffalo State Hospital.
Buffalo, N. Y.

THE SYNDROME OF ACUTE (ALCOHOLIC) HALLUCINOSIS

BY G. M. DAVIDSON, M. D.

Orientation

In a former study concerning the involutional syndrome, the writer called attention to certain fallacies of thought in regard to psychiatric classification. The fallacies were considered to be due, among other things, to a noncritical carrying over of mechanistic principles of the last century into the field of dynamics of our times.

Here, attention is again called to the error of looking for "the" cause of a disease process, since it is well established by biological research that what is believed to be "the" cause is often an inadequate explanation, and that causes are multiple. The latter is particularly applicable to psychiatric disorders in view of the fact that the psyche is rooted in the total personality. This principle ought to be especially borne in mind in dealing with a problem like the present one.

The purpose of this study is to investigate certain clinical manifestations which when grouped together may be labeled as "the syndrome of acute (alcoholic) hallucinosis." The given formulation is based upon the foregoing consideration of causes, as well as upon the fact that acute hallucinosis is observed not only (though commonly) in connection with alcoholism, but is also known to occur in the course of schizophrenia (Wolfenberger and others), as well as in manic-depressive psychosis (de Ponte and others) and in neurosyphilis (Plaut, quoted by Bleuler). While the writer observed a number of nonalcoholic hallucinoses, as shall be illustrated, the bulk of his cases occurred in individuals with a definite history of alcoholism for which reason the study is based primarily on the alcoholic group.

It seems advisable, for sake of completeness, to give a brief outline of the syndrome and of the psychiatric attitude toward it. The disorder is observed among both sexes. According to H. M. Pollock (in Emerson's "Alcohol and Man") there were 186 males and 35 females who showed acute hallucinosis of a total of 497 males

and 102 females presenting "alcoholic psychoses" among first admissions to New York civil State hospitals for 1931.

The onset is acute, usually related to an alcoholic "spree." It may follow an attack of delirium tremens or show an admixture of symptoms of the latter. The physical findings are slight, except when the syndrome follows a debauch at which time symptoms of acute intoxication may be present. Otherwise, the patients may not even give an impression of being chronic alcoholics. Insomnia is always observed but not to the extent seen in delirium tremens. Somatic sympathicotropic symptoms may be present. As a rule, however, the cases make a good impression physically. Laboratory findings are lacking but it is felt that they are to some extent ignored.

Mentally, upon close observation, prodromal symptoms in the form of feelings of inadequacy for a brief period of time may be observed. As a rule, they are quickly overtaken by anxiety, fear and agitation. Besides the symptoms mentioned, the average case shows as outstanding features auditory hallucinations of a derogatory and threatening character which are accompanied by a paranoid trend of ideas. The "voices" discuss the patient among themselves or talk directly to him; they are identified in a large number of cases as belonging to persons of the same sex as the patient. In other instances, voices of both sexes are heard by the same individual. It is of interest that the patient is seldom persecuted by one person; it is usually a gang which is after him. Among various trends, jealousy of and infidelity of the partner are common. Another striking feature is the fact that the patient seldom attacks the situation, he only defends himself and usually flees from alleged danger. It is at this time that suicide may occur. Again, it is noteworthy that the patients do no feel entirely innocent. Bonhoeffer pointed out that auditory hallucinations may synchronize with certain rhythms, such as the pulse, or with sounds from the outside.

Less frequent trends are observed in the form of persecution by noxious vapors (olfactory hallucinations), or as ideas of poisoning, involving hallucinations of taste, as well as tactile hallucinations and somatic sensations. There may be also visual hallucinations. The patients commonly see grotesque faces or figures. Bonhoeffer

further observed ideas of grandeur. The sensorium is characteristically clear, except for occasions when there is an admixture of delirium.

The course is regarded by Kraepelin to be of either acute or subacute character. The former type lasts from a few days to a few weeks, the latter, from two to three months.

The exact nature of the syndrome is unknown. Bonhoeffer thought that there is no difference between acute hallucinosis and delirium tremens, to which other writers could not agree for obvious clinical reasons. That the distinction is, indeed, rather forced is seen from Bonhoffer's own expression, namely that acute hallucinosis is a delirium with a clear sensorium. Kraepelin disapproved of this supposition, giving very good reasons for the denial. There is also the proposal to link acute hallucinosis with schizophrenia, as expressed by Bleuler, Pohlisch and others. The present writer believes that this attitude may be valid so long as one speaks of "schizophrenias," comprising a large group of mental disorders. However, as soon as one makes an attempt to disentangle the group into syndromes, he encounters a great difference between acute hallucinosis and schizophrenia, as clinical syndromes. Kraepelin analyzed these differences relative to onset, symptomatology and course. Of particular significance are the manifestations of affectivity (considered with respect to the latter, in the sense of Bleuler) in the two disorders.

It has also been maintained that acute hallucinosis belongs to the manic-depressive group, for the reason that certain personality traits were observed in the subjects of acute hallucinosis which are commonly seen in cases of cyclothymia (Schneider, Hart and others). This observation seems valid to a certain extent, a matter upon which I shall comment later.

Concerning alcohol as the sole cause of the disorder, Schneider argued that this is not the case, since nonalcoholic acute hallucinosis is observed. Moreover, he thought that the psychosis occurs in connection with psychological factors. He, therefore, considered the syndrome to belong to the so-called constitutional psychoses. It is believed that this question is partly answered by the remarks introductory to this study. In view of the fact that in the vast majority of cases the syndrome occurs in connection with alcoholism,

even if alcohol is admittedly not the sole cause, the significance of alcoholism in the problem requires investigation. It is proposed, therefore, to consider certain opinions regarding alcoholism.

There are many theories concerning alcoholism which emphasize hereditary, physical, mental and environmental factors. References will be made only to the more prominent hypotheses.

It is traditional for the medical man to look first for pathological data. In view of the fact that the cases in question usually recover, no particular data are available. However, it is known that alcohol attacks various cerebral levels, among others the hypothalamic and the parieto-occipital, as well as the vegetative nuclei, et cetera. In cases of acute and chronic alcoholism one finds edema, congestion, minute hemorrhages and diffuse nonspecific changes of the smaller vessels of the brain, as well as involvement of ganglionic and glial tissue (Marchiafava and others). Whatever the pathology in cases of acute hallucinosis might be, it is apparently reversible.

Regarding physiopathology, we know of the influence of alcohol upon the sympathetic nervous system and the fact that alcohol is a fat solvent. The latter will have certain relationship to the cholesterol metabolism which may be of considerable consequence. There is also the question of avitaminosis. The significance of edema and meningeal irritation were discussed by Cowles. The writer believes these changes to be of rather secondary character which in themselves cannot explain the mental manifestations, as advocated by Cowles. From a general biochemical viewpoint the opinion of McDougall is of interest. This author sees in alcoholic intoxication extreme extraversion. It is evident that the physical findings alone cannot account for the situation.

The psychological approach seems more promising, particularly from the standpoint that psyche and soma are aspects of one and the same although they are measured by different methods. In fact, the herein cited studies of the involutional syndrome convinced the writer that mental phenomena may give cues to underlying physiologic states, even if their relationship is unknown. Of psychological approaches, I wish to mention the viewpoint of individual psychology of Adler concerning inferiority and frustration underlying the individual's strivings for power with regard to the

great challenges of life: love, work and social obligation. Psychoanalysis considers alcoholism to be due to homosexuality. This conclusion is based upon the drinker's preference to imbibe in the company of members of his or her own sex and upon the manifestations of tenderness toward the fellow drinker, the symbolism of the mental content of patients and the paranoid trend frequently noted. According to this school of thought, alcoholism may also be due to efforts on the part of the individual to overcome castration anxiety which if not overcome is consoled by the resulting impotence, which in turn is symbolic for castration (Abraham, Carver and others). These various views are perhaps to some extent united in the formulation of Read, who stated that alcoholism has for its aim the promotion of social feelings and the repression of mental conflicts.

With the foregoing in mind we shall turn to the clinical material. Since the psychoanalytic view is most widely accepted, the cases were studied with particular attention to data upon which this view is based. Moreover, that view was confronted with other observable facts.

Clinical Material

A large number of cases were observed over a period of several years. Thirty cases of both sexes, between the ages of 27 and 52, representing various racial groups, were studied as far as circumstances allowed. On the whole, this group of patients apparently did not differ from the majority of patients described by other investigators of the problem.

Case 1. Male, age 28, mixed race, divorced. No familial influences known. He was born in the U. S. A., the third of four children. The family was in comfortable circumstances and of certain standing in the community. He remembers himself since the age of 4; was always quite attached to his older brother. When the patient was 12 years of age his brother married and he himself became the center of interest of the family. He had a good school record, completing high school at 17, but did not care for further study. The economic position of the family also changed at that time and he learned a trade, in which he occupied himself up to about two years before admission. From then on, he worked irregularly. Sexually, there is a history of transitory autoerotism at the time of puberty at 14. He had his first heterosexual experi-

ence at 15 and continued thereafter to have sexual relations with the opposite sex, associating freely with them. Sex impulse, however, is described as weak. Otherwise, he is considered friendly and sociable, easily led by others, reserved as to his own affairs. He began to indulge in liquor when first unemployed. He drank in bars with both men and women. Three years prior to admission he married a drinking companion, claiming to have been physically attracted to her. The woman was previously married and divorced. This marriage lasted only a few months; they were sexually incompatible because of the fact that the wife could experience orgasm only after a prolonged sexual congress which the patient could not afford; thus she was continuously ungratified. After the divorce he drank more and twice developed delirium tremens with the usual fears and hallucinatory experiences involving small animals. He recovered promptly.

The present difficulty set in after three months of steady drinking when he began to hear voices of a derogatory and threatening character. He saw strange faces and was fearful. His sensorium was clear. Physical status was negative. He recovered within a few days.

Comment: Morphologically, the patient was of average stature, slender, showing abundance of hair over body especially over the head and eyebrows, which together with quickened cerebration suggested thyroid hyperactivity. Affectively he was somewhat feminoid. His aims and appetites were rather diffuse. He was interested in social activities but lacked the drive. Sex impulse, although weak, was concentrated upon the opposite sex, and there were no manifestations of homosexuality. He associated freely with women and married a drinking woman companion. The wife was of his age and feminine in her morphology. His drinking began in a social way; later he took liquor to increase feelings of well being. After marriage when he found himself sexually inferior, his drinking increased. Mental content and dreams were suggestive of feelings of guilt, disgrace and degradation, as well as inferiority with expectation and fear of punishment. There was also a desire for, and fear of, reunion with his wife.

Case 2. Male, age 36, mixed race, separated. Father was unstable, mother diabetic, two brothers moderately alcoholic. He was

born in the U. S. A., the second of four children. He was his mother's favorite, otherwise his early development was believed uneventful. He had a good school record, and had worked as a clerk and salesman, with fair success in the past. He is described otherwise as sociable, having many friends, being fond of music and sports. Sexually, no abnormalities are known. His first heterosexual experience occurred at 16, following which he continued to have frequent sexual relations. He married at 29, after a love affair. His wife was of a different faith and he changed his religious affiliation. This circumstance was troublesome to him. The wife proved to be demanding and she imposed her will upon him; on the other hand the patient made excessive sexual demands upon the wife, which in turn was irritating to her. Shortly after marriage his mother died and he began to drink to excess. His libido diminished rapidly and he commenced to accuse the wife of infidelity. This culminated in a separation. The onset of his psychosis related to a spree. He heard voices calling him bad names and threatening to cut him up, and he believed that a gang was after him. In a state of fear, he ran to the police for protection. Sensorium was clear, physical condition good. He recovered promptly.

Comment: This patient was of leptosomatic makeup. He was spoiled by his mother and had always had his own way. In marriage he met with the opposite condition and developed feelings of inferiority with a strong desire for mastering the situation in order to achieve recognition. However, his sexual impulse was weak and attempts to compensate the latter by excessive practice together with alcoholic excess undermined his libido. There was no evidence of homosexuality. He associated freely with the opposite sex. His wife was feminine in her morphology, yet her affectivity was somewhat masculine. His mental content and dreams suggested feelings of guilt directed toward his mother "for sacrificing the religion in which she had brought him up," and feelings of inferiority toward his wife. He entertained fears of losing his masculinity altogether, which would render him hopelessly inferior.

Case 3. Male, age 36, mixed race, married. He had been born in England, the last of four children. Early development is believed to have been uneventful, and he had a good school record.

Later he became a machinist; was an efficient worker and always occupied but his income was insufficient. Sexually, no abnormalities are known. First heterosexual experience occurred at 18, with impulse fairly strong. He married for the first time at 20 and this marital adjustment was satisfactory. There were four children, his wife dying 10 years after marriage. He remarried two years later. This marital adjustment was poor; there were yearly children, which worried him considerably. He began to drink in a social way with his first father-in-law to whom he had formed a considerable attachment. His drinking increased with the growth of his family. Since the second marriage he drank to excess. Otherwise the patient is described as a sociable man with exaggerated feelings of responsibility toward his family. After a particularly immoderate celebration of the Christmas and New Year's holidays, he began to hear voices of a derogatory character. He became jealous of his wife, accusing her of having relations with his 15-year-old son. He thought that people were after him to kill him, and went to the police for protection. In the hospital he was anxious and fearful, and hallucinated in the manner stated. Upon examination he related dreams of a homicidal nature directed toward his wife and son. The sensorium was clear, the physical status negative. The course of his illness was subacute in character. He was considered to have recovered, but while on parole admitted having "ideas."

Comment: This man was of pyknic makeup. While he was of masculine body style, his face had a feminine cast. The points of interest are: the attachment to his father-in-law, the choice of wives who were boyish in their morphology, and an exaggerated parental impulse, all of which pointed to feminoid traits in his personality. It is possible that alcohol, in diminishing the libido, accentuated his original affective constellation. It seemed that the patient developed libidinous designs upon his young son, upon whom he later projected guilt feelings. He had homicidal ideas toward the wife and son, and was afraid of punishment. This warrants the conclusion that homosexuality played an important role in the case. When the case was presented at staff meeting comments were made that there was here a clinical picture akin to agitated depression.

Case 4. Male, age 31, negro, single. He was born in the U. S. A., one of a large family. Early development is unknown although his school record was regular. He took employment in domestic service, and was self-supporting until about six months previous to admission when he lost his job and had to be assisted by his family. Several years ago due to an accident he lost three fingers of his right hand; somewhat later he lost vision in his left eye, also through an accident. The sexual impulse was weak. He had heterosexual experiences since the early teens, associated freely with women and had for the past two years a "steady" woman friend of his own age. He is described as being friendly, but reserved and somewhat shy because of his physical handicaps. He commenced to drink in a social way in his early twenties, a habit that has increased during the past few years. He drank to excess after his loss of work. His libido diminished; he began to suspect his girl friend of infidelity, and shortly afterward left her. While on a spree for several days, he began to hear voices calling him bad names. Later they threatened him with bodily harm. Finally he heard his girl friend screaming for help and he thought she was being murdered. He became afraid that he would be accused of murder, heard people coming after him and barricaded himself in his room. The sensorium was clear and his physical condition good. He recovered within a few days.

Comment: This patient showed no striking traits in morphology. There was no evidence of homosexuality in his prepsychotic makeup. His sex impulse was weak, but oriented upon the opposite sex. There were feelings of inferiority because of physical defects which compounded later by diminution of libido. He projected his feelings upon his girl friend and finally developed homicidal ideas with feelings of guilt and fear of punishment.

Case 5. Male, age 45, Irish, married. His father was alcoholic. The patient was born in the U. S. A. As a child he was mischievous, rebellious and unruly. School record was good as to studies but poor as to behavior. He managed to complete high school; later he worked in clerical positions. As a young man, he enlisted in the army and served overseas. After the World War he dabbled in politics but was never able to stay in one place long, although he managed to make a comfortable living. Sexually he was

active since his early teens. There were no homosexual activities but he was inclined to form strong friendships with members of his own sex. He married "accidentally" in the late thirties after a debauch, and lived separately from his wife. While on a spree he and another man took two women for a "joy ride." The women complained that the men had attacked them and the patient was arrested. While in jail he developed hallucinations of hearing of a derogatory and threatening nature. There were visual hallucinations referring to army camp life with a clear sensorium. He was hospitalized. There he showed a syndrome of acute hallucinosis, of subacute course. Two years later he required another hospital residence. At that time following a drinking bout he developed fears and anxiety, and thought he was going to be killed. He also believed himself to be subject to an incurable disease, and had hallucinations of smell, as well as somatic sensations. The sensorium was clear and the physical condition good. The psychosis showed a definite involutional character. He eventually recovered.

Comment: The man was of athletic makeup. He showed a number of psychopathic traits. Sexually his impulses were weak with a tendency to overcompensation. While there were no manifestations of overt homosexuality, his mode of life and the manner of associations with his own and the opposite sex, as described, are suggestive of latent homosexuality. Of further interest is that his first mental condition was one of acute hallucinosis and that the second attack showed an involutional character.

Case 6. Female, age 33, negress, widowed. She was born in the U. S. A. Her early development is unknown but believed uneventful. She attended common school, making an average record. She married at the age of 16 and had one child. Three years later she separated from her husband because of his alleged cruelty. After her husband's death, some time later, she associated with another man but they could not get along and, therefore, she left him and subsequently could find no suitable partner. Her sexual impulse was fairly strong and her menstrual history negative. The patient had an urge for social activities and recently joined a club. During meetings she would consume large quantities of gin and become intoxicated. Under the influence of alcohol her disposition changed; she became unstable and easily frightened. Her indulgence in liquor

increased, and finally she commenced to hear voices which called her names, such as prostitute. They further threatened her or would order her to commit suicide. She would also see peculiar figures and was frightened although her sensorium remained clear. The physical status was good. She recovered promptly.

Comment: The patient was a small and underdeveloped woman of very selective social and sexual impulses who began to take liquor as an aid in meeting situations. There was no evidence of homosexuality. The mental conflict was referrable to guilt feelings concerning her "immoral" life.

Case 7. Female, age 32, Irish, married. She was born in Ireland one of four children; early development given as uneventful. She received a common school education, following which she helped at home on a farm. At 16 she came to this country, working here in hotels. The menstrual history was irregular. She had her first heterosexual experience shortly before coming to this country and felt badly about it. While in this country she would occasionally have sexual contacts, not so much because of an urge but in order to appear "regular," taking liquor for assistance. She is described otherwise as a timid, conscientious, superficially religious person. She married a coemployee because of his insistence. Their marital adjustment was poor, the husband making excessive demands upon her. She felt exhausted, had headaches and could not sleep. The patient took alcohol to help the situation, continuously increasing the quantity. Finally she developed the usual hallucinations of a derogatory and threatening character and experienced great fear. The sensorium was clear. Physically she showed inactive pulmonary tuberculosis and chronic sinusitis.

Comment: This patient was a hypoplastic woman. Her sexual and social impulses were low, she felt inferior and took alcohol as an aid in meeting situations. After marriage matters became worse because of her husband's excessive demands upon her. She tried to cooperate but failed. There was no evidence of homosexuality. Mental content showed feelings of guilt and fear of punishment. The course was subacute and akin to an agitated depression.

Case 8. Male, age 42, negro, married. The patient was born in the U. S. A., the only child. His family was in comfortable circumstances and he received a high school education, took employ-

ment as an elevator operator and did well. Radio mechanics, which was his hobby, apparently absorbed all his interest. He was ambitious but inclined to feel insecure about the future and was reserved as to personal affairs. Puberty was late, and he had infrequent heterosexual affairs until his marriage at the age of 32. The marital adjustment was satisfactory as his wife did not care for sex very much herself. There were no children and they were not missed. The patient was an abstainer from liquor. His psychosis was acute in onset. He felt inadequate for a few days and then began to hear voices of a derogatory and threatening character. Shortly afterward, he had seen two men on the roof of the house in which he lived. He became extremely frightened. His sensorium was clear and his physical condition good.

Comment: This patient was a well-developed man, of schizoid makeup, and feeble sexual impulse. No homosexuality was demonstrated and he had considerable social aspiration, hoping to achieve recognition through excellence in his hobby. However, he felt insecure. Alcohol was excluded. No definite precipitating causes for his mental condition were known. It appeared to be entirely endogeneous. Social insecurity and sexual inadequacy may be considered. The clinical syndrome shown was one of acute hallucinosis. He recovered promptly. The nature of the illness was believed to be schizophrenic.

Case 9. Male, age 47, mixed race, single. The father was alcoholic, the mother a religious fanatic, the brother psychopathic and the sister neurotic. He was born in the U. S. A., the youngest of three. The early development is unknown. He received a good education and was a civil service employee. Heterosexual relations were practiced since early teens, with no desire for marriage. He contracted syphilis at the age of 16; believed himself to have been cured. Two years before hospitalization he began to have ill-defined somatic complaints. Serological report showed a complete paretic formula. He was given malaria treatment with good results, being able to return to work. Shortly before the second hospitalization, his complaints returned; he also showed some mild neurological disturbances including difficulties in speech. He received another course of malaria. After the fifth paroxysm, the patient began to hear voices of a derogatory and threatening na-

ture and was fearful. He thought a gang was after him, and saw peculiar "Chinese" figures. The sensorium was clear.

Comment: Here we have a patient, subject to psychosis with syphilitic meningoencephalitis who, while undergoing malaria treatment, showed a syndrome of acute hallucinosis. Alcohol as a factor was satisfactorily excluded. Regarding his total personality makeup, this man showed features akin to those observed in other cases of the group. There was no evidence of homosexuality.

Comment

In order to satisfy the established objective, the clinical material was investigated with reference to the following items:

1. Peculiarities of the total personality which might be considered the background of the syndrome in question.
2. Dynamics of alcoholism and its relationship to that background, as well as to the external manifestations (symptoms) of the syndrome.
3. Validity of the syndrome.
4. Treatment.

Peculiarities of the total personality

It seems that the total personality may be evaluated more or less *in toto,* as seen from the well-known approach of Kretschmer, namely the combination of physique and temperament. Reference is made to the two types, or better, prototypes of schizo- and cyclothymia. It is only rarely that the writer observed a clear-cut type among his cases of acute hallucinosis. As a rule, the patients showed rather mixed traits with perhaps a leaning toward schizothymia. As for striking traits of total affectivity of the cases as a group, the following were noteworthy: There was a lack of elasticity of affectivity apparently interfering with adjustment and tolerance, which in turn also limited compensation. The psychical after-effect, under which is understood the strength of attachment to former experiences real or alleged, is increased. This is believed to cause accentuation of traits, such as sensitivity. The situation is similar to that encountered in cases of agitated depression and involutional mental states. In fact, if such personalities develop acute hallucinosis the course is likely to take on a subacute

character, and the syndrome may mimic agitated depression, as seen in cases 3 and 8. Still, nothing specific could be established from such general estimation of the total personality. Therefore, attention is called to constituents of the total personality, the sexual and social levels, which allow of more detailed study.

Regarding sexual impulse, with due consideration of the psychoanalytic theory of libido organization, the writer wishes to call attention to the following data: The sexual impulse consists of hormonal, autonomic, ionic and psychological components. In its evolution, Marañon distinguishes the following stages: 1. the nonspecific stage, 2. the concentration of the impulse upon the opposite sex, which is purely sensual and may be seen in the Don Juan type, 3. the concentration upon a certain type of the opposite sex, and 4. concentration upon a certain individual. In the latter case there may be overspecialization which might result in inability to realize the objective, as observed and described by Marañon in the "Amiel" type. It differs from the Don Juan type in the sense that in the former it leads to sorrow and pain, rather than to pleasure, as in the latter.

As to masculinity and femininity, Marañon says that they are not to be regarded as two diametrically opposed entities but as successive degrees in the development of a single function of sex. Here, it seems proper to mention that the ovary is a bisexual organ, while the testes are monosexual. The former has rudimentary masculine tissues. Consequently, loss of feminine tissue, as seen in involution, may cause virilization of the female, in which the affective constellation plays an important role. Woolard and others advocate that virilization may also be caused by abnormal growth of mesonephric tissue which, for instance, is present in the adrenal gland. In the male, we are told, the influence is primarily psychological. However, the present writer believes that a biological component must be present, since we observe in such cases manifestations of intersexuality. From a biological point of view the latter is a universal phenomenon. Still, it does not warrant us to consider every person homosexual. On the contrary, the term ought to be reserved for definite clinical manifestations. Intersexuality, of which homosexuality is a variant, may manifest itself in the morphological or affective fields, or both. The former may

show up in bodily style or parts of it, commonly observed in the opposite sex of the individual, such as large hips in the male or narrow ones in the female; prominent large upper incisors in the male, and separation of teeth in the female; distribution of hair commonly observed in the opposite sex; muscular vigor in the female and grace in the male, et cetera. Affective intersexuality is seen in the aggressiveness of a female and the passivity of a male, and tastes and appetites commonly characteristic of the opposite sex of the individual in question. Choice of partner is also significant. The feminoid male is usually attracted by the aggressive female, and vice versa. Of further significance is that the homosexual man is not attracted as a woman would be to a vigorous man but rather to a male youngster, who not being fully differentiated approximates the female, a symptom observed in homosexuals from Plato to Oscar Wilde.

Homosexuality may be determined biologically or conditioned psychologically. In the latter case, the writer has already suggested that the constitutional receptivity is probably based on hypogonadism. According to the psychoanalytic school narcissism may be instrumental in homosexuality. Horney states that the latter, as well as a castration complex, evolves from identification with the parent of the opposite sex.

A few words concerning parental impulse may not be amiss. The latter is tied up with the sexual and social impulses. Its absence in the female is significant for strong intersexuality. Its exaggeration in the man is a feminoid trait. As any impulse, it may be satisfied in a positive or negative way, the former manifesting itself in love for the family, the latter showing up in celibacy, artificial abortion (educational and social influences to be considered), and at the height of its expression in infanticide.

Applying the foregoing principles to the prepsychotic history of the patients we find that the sexual impulse reached the second stage of development, that of concentration upon the opposite sex in all cases. In certain cases there was further concentration upon a certain type of the opposite sex. With the exception of case 6 in whom the sexual impulse was overspecialized, none reached the full development of concentration upon "the" individual of the opposite sex. Common to all cases was low expression of sexual

energy. Eight cases showed morphological, and six other cases demonstrated affective intersexuality. About one-third of patients showed no objective signs of intersexuality. Strong attachment to the parent of same sex was noted in three cases and strong mother attachment was seen in six cases. Narcissism was not much in evidence. None of the patients were born late in their parents' life. As to the patients' relations to the opposite sex, about one-third showed adequate relationships, some even drank in company with women, one married a drinking companion. Others preferred to drink in company of their own sex but showed no undue tenderness toward the drinking companion. There was no evidence of overt homosexuality. Two cases showed latent homosexuality. The evidence thus far points to psychosomatic hypogenitalism with certain manifestations of intersexuality which does not warrant, however, generalization that homosexuality is an exclusive trait. With the exception of case 3, the parental impulse was weak in all cases.

The social impulse which is judged by the patient's attitude toward his family, as well as his moral, political and religious activities, was of a low order. It would seem that in certain cases there is an urge for social activity but there is lack of drive to accomplish this, or that the set aims are inadequate.

In summing up, it may be concluded that we are dealing in the studied cases with insecurity of sexual and social impulses which render the total personality vulnerable and receptive for the release of the syndrome. While the mechanism of the release is unknown, it is believed to be due to an interaction of the vulnerabilities and so-called causative or precipitating factors. Moreover, as the writer repeatedly voiced there is a break in the system of defense of the total personality. If we disregard alcohol as a factor, other presumably causative agents refer to the same sexual and social levels of the personality. For example, in case 8, we have sexual inadequacy and social insecurity; in case 9, there is in addition neurosyphilis and malaria fever. All factors are obviously nonspecific. Further comment follows a discussion of certain dynamics of alcoholism.

Dynamics of alcoholism

In dealing with the problem of alcohol, the investigator must divorce himself from his personal views on the subject which may be rooted in morals, ethics and identifications with certain schools of thought. It is the more difficult, since it is so easy to see what one wants to see, particularly when this is facilitated by an enormous variety of clinical manifestations. A sobering effect may be produced by investigating the biological and historical aspects of the problem.

Here, only salient points will be touched upon. For instance, it has been shown experimentally that alcoholic intoxication in fish causes an increase in swimming movements with subsequent decrease. Wasps may become intoxicated with the juice of over-ripe fruit following which they show overactivity. Later they appear somnolent and crawl slowly away. Alcoholic intoxication in animals leads also to an increase with subsequent decrease in motion. Dogs seem to show intoxication very plainly. Fox terriers are known to develop a definite liking for alcohol. Darwin described a baboon who became badly intoxicated with beer and refused more the next morning when it was offered. These facts allow one to conclude that intoxication in lower forms of life conforms with the cycle of biological affairs, first stirring up and later slowing down motion. In animals, in addition, there is an indication of the possibility of choice and refusal.

In man, the knowledge of alcoholic intoxication may date back to the dawn of civilization. The knowledge was probably acquired shortly after the discovery of grain, thus referring to the Sumarian epoch, since the oldest alcoholic beverage known to mankind is believed to be beer. At any rate, alcoholic beverages were definitely known more than 3,500 years B. C., to ancient Egyptians, Babylonians, Hebrews and others. Rameses III boasted of having donated 466,303 "jugs" of beer to temples. Intoxicating drinks were also known in China some 2,000 years B. C. At about the same period the Incas of South America prepared drinks from *maiz*.

The attitude of man toward drink may be judged from mythology, which in turn may have been partly created in the intoxicated states. For instance, the Vikings believed that the inhabit-

ants of Valhalla pass their time in glorious drinking of intoxicants from the skulls of their enemies slain in battle. It suggests that drinking was highly reputable and there is evidence, to some extent present among certain people today, that the more a man can consume, the more respect he commands from his fellow men. As time passed a special patron was assigned by various peoples to dispense the delight. The Hindu had such patron in his god Indra who was believed present in spirits. Their drink "soma" was believed to lengthen life and give victory in battle. In a quite different civilization, ancient Greece, there was the Dionysian cult provoking great ecstasies and connecting religion with sexual excitement. Bacchus and bacchanalia were a feature of Roman life of the same character. According to Partridge, during the Middle Ages sensual cravings increased which brought on intemperance reaching its climax in the carnivals of Venice. Again, during the Renaissance with increase of individuality, there was also need for increase in excitement and consequently an increase in alcoholic indulgence.

The foregoing suggests that with man alcoholic intoxication is a matter of choice which originally was used perhaps to stir up biological rhythms, producing diffuse pleasure. Later it rendered considerable service to mankind, contributing to the development of man's imagination and playing an important role in the creation of religion. The primitive recognized early the ecstatic powers of intoxication, and strove for the godly pleasures. The cost of the ecstasy was, as Miles (in Emerson's "Alcohol and Man") says, paid by mankind willingly throughout the ages. Furthermore, the primitive also recognized the role of alcohol in promoting social relations. The latter was equally recognized by civilization as such, when a rise of individuality called for an increase in intemperance. The paradox is that the much needed social solidarity had to enact laws for curtailing the use of alcohol because it produced in certain individuals, traits menacing the community. It is suggestive that along with psychological growth, men began to seek intoxication for a greater variety of causes. While the latter are individual, the following generalizations may be considered.

Concerning total personality, it has been said that an individual is an alcoholic long before he took a drop of liquor, thus implying

a biochemical basis. That the latter plays an important role is seen in the fact related by Mapother that identical twins have been known to become independently alcoholic. The constitutional and biochemical aspects were emphasized, as already mentioned, by MacDougall who identified alcoholic intoxication with extraversion. It may further find indirect confirmation in the fact that the so-called causes of alcoholism are nonspecific, since they may be present in a number of people who do not resort to alcohol to remedy the same situation. There may be, however, persons who under certain circumstances might develop an affinity to alcohol, even if originally lacking such, as seen from studies on habits. However, the biochemical aspects alone are insufficient to account for alcoholism, for which reason psychological and physiological issues have to be considered.

As the writer sees it, the reasons for drinking may be grouped as follows: 1. Alcohol may serve as a "pacifier" for physiological and psychological tensions. In psychological terms this means to aid in repression, or "to flee" from an unpleasant situation. 2. Alcohol may be taken to increase function, in order to help in meeting a situation. Thus in psychological terms it promotes compensation (defense). Clinically, the former manifests itself in various forms of intoxication; the latter is seen in productive mental states, such as active or passive projections, confabulations, and so forth. There is a type which may find refuge in both mechanisms. Reference is made to the type, emphasized by Starling, in whom the control of the higher centers is so strong that it prevents the men from creative work, thus requiring relaxation of the exaggerated control. It appears that our cases belong to the second group.

Regarding differences with reference to sex, it seems that through ages it was the man who primarily indulged in alcohol. The reason is believed to lie in the variability of his biological rhythms, as well as responsibilities attributed to him. The woman whose rhythms are more steady and original mode of life more monotonous did not have to indulge. At present matters are different; masculinization of the female disturbed her rhythms which in turn resulted in her increased intemperance. That alcohol belongs to masculine tastes is further seen in the fact that after involution when a woman may become virilized, she frequently takes

to liquor among other changes in activities and tastes of a masculine order.

Next, certain physiological aspects of alcohol in the light of new data submitted by Burridge will be discussed. This author attempts to find a correlation between psychological phenomena and histochemical changes of neurons. According to him, central neurons are rhythmical tissues. They acquire a new property which he calls responsiveness and which is a psychological phenomenon. On the other hand, the activities which evoke the responsiveness are neural. Such activities, or the excitation process, depend upon the combination of colloidal aggregations and electrolytes. He denotes the former with the letter *L* and the latter with the letter *H*. The more there will be of *L* the less of *H*, and vice versa, *L* and *H* may be also maladjusted. *L* gives data for sensation, and *H* offers judging capacity. It is important to realize that an organ has a limited amount of responsiveness which capacity is denoted as *T*, thus presenting a formula of $L+H=T$. Inadequate composition of the excitation process may surpass the capacity of the organ which in turn will reflect upon consciousness (unconsciousness, convulsions).

Of further interest is it that rhythms may be quickened or slowed down; the former is identified with pleasure, the latter with unpleasantness. There may be also changes in amplitude of the process: the greater the amplitude the slower the response. Burridge showed that the action of alcohol upon tissues ought not to be measured by the "either-or" approach, meaning either stimulating or depressive effect. He proved that alcohol both stimulates and depresses. He finds that small amounts of alcohol stimulate while larger concentrations eventually overwhelm stimulation by depression. The amount of concentration is an individual affair. These findings would seem to corroborate the theory of alcohol habituation or addiction of Tatum and Seevers, namely, that addiction is a question of physiological balance between stimulation and depression of any given level of irritability of the integrated nervous system. Burridge further states that alcohol is able to quicken all rhythms and amplitudes, as well as to reduce judging capacity. If so, then the first reaction will increase the pleasure content of ideas and neutralize pain, the second will increase the value of the environment and thus promote better feelings toward the drinking

companion, and the third, will relax control of higher levels, allowing the person to assert himself. Such is apparently in harmony with the biological aspects of alcoholism, as related.

The same author also calls attention to the fact that the increase of rhythms and amplitudes by alcohol is akin to the workings of the endocrines. He suggests that if alcohol can do the work, then the economy of the organism will allow it, which in turn will result in reduction of gland activity, up to the point of cessation of secretion. To this end, the writer would like to postulate that if alcohol takes such a place in the organism, it may as a fat solvent, dissolve sex hormones inasmuch as the latter are of cholesterol origin, as shown by Ruzicka and others.

Of further interest is the stimulating action of alcohol upon the sympathetic nervous system. In so doing, it will depress the parasympathetic. Considering the evidence produced by Cannon that sexual excitation up to orgasm, as well as the phenomenon of erection are of parasympathetic character, and the evidence of Walthard that the sympathetic depresses the female reproductive organs, the action of alcohol will result in depression of certain aspects of libido. In fact, it inhibits hormonal, autonomic and ionic activity. On the other hand, it will increase psychosexual values, thus not only justifying but explaining Shakespeare's statement (in "Macbeth") that alcohol provokes the desire but takes away the performance. The situation may contribute to the already existing conflict, in the way of increasing the original sexual insecurity. We shall see next how it may reflect upon the individual's behavior.

The first pronounced external manifestations of the syndrome are those of anxiety and fear. Both biology and psychology regard anxiety as a signal of danger. Fear, Cannon says, is an anticipatory response to a critical situation. Anxiety and fear are, therefore, of great significance for the survival of the individual, because of their role in setting up psychosomatic measures of defense. Considering the accompanying physiological manifestations of anxiety in one form or another, we have reason to believe that in anxiety we deal with a sympathico-adrenal response. Since the sympathetic nervous system also innervates the thyroid gland, we also observe manifestations of the latter. In fact, a number of writers such as N. D. C. Lewis, Ingham and Nielson, and others

identify fear with thyroid hyperactivity. Since alcohol stimulates the sympathetic system, there is reason to think that under certain circumstances it may cause an outpouring of adrenalin into the circulation which in turn may be responsible for the mentioned symptoms. On the other hand, it may work centrally. Hypothalamic damage due to alcohol will also set up anxiety and fear. Psychologically, sexual and social insecurity may provoke feelings of guilt with projection, in fear arising from social obligation and in anxiety due to pangs of conscience, thus setting up a psychosomatic vicious cycle. Changes in the motor field, meaning the unrest, agitation and so forth are the outcome of the affective state. In the sense of Burridge, alcoholic influence upon the factor *H* will cause maladjustment of the forces *L* and *H* which in turn is responsible for the motor unrest.

As to mental content, we distinguish first auditory hallucinations of a derogatory character which are obvious projections of guilt. They are followed by threatening voices which are the next step in the evolution of the symptom calling for a compromise or punishment. The feelings of guilt are of further importance from a differential point of view. Reference was already made to the fact that our patients do not feel altogether innocent, which according to Ballet is characteristic of a cyclothymic form of projection, in contrast to the schizophrenic way of considering oneself innocent.

The next step in the evolution of the symptom of guilt in our cases (no matter how rapidly the evolution may proceed), is the appearance of ideas of persecution. Here again, it is emphasized that the patient is seldom persecuted by one person. It is a gang which is after him, thus allowing the interpretation that in such cases the paranoid trend is rooted in the social impulse. It is contrary to the homosexual paranoid trend when the patient is persecuted by one person, usually a former friend upon whom the patient projects libidinous designs. In interpreting ideas of persecution we must further bear in mind that projections may be rooted in many situations, as discussed by Feigenbaum. This author points out that narcissism, ambivalency of feelings, hypertrophied need for love, necessity of restoring cathexis relations, racial prejudice and competition may be a soil for projection. This can be readily demonstrated in our cases. Moreover, in certain patients

projection sprang from impotence, from desire for another partner and from a struggle for supremacy.

Concerning somatic sensations, which are physiologically sympathicotropic in nature, they may manifest themselves as an accompaniment of anxiety, as an equivalent of anxiety, or as conversion of affectivity. Psychologically, they may be due to exaggeration of original personality traits, or linked with guilt. Concerning the less frequent hallucinations, the writer wishes to refer to his former work on hallucinations of smell in which it was shown that physiologically these may be linked with acute hypogonadism. Psychologically, they are identified with direct and indirect self-accusation, or signfying choice and refusal. With regard to visual hallucinations it may be said that certain patients had a history of delirium tremens and have hallucinated the snake. Beyond the fact that the latter is widely accepted as a phallic, homosexual symbol, the writer wishes to offer the following comment. According to Potter, Osmont and others, the serpent was in the beginning the messenger of God in the Garden of Eden to bear glad tidings of immortality to men. The Babylonian cylinders refer to the serpent as a God or a symbol of God. It could also be Zoroaster's conflict of good and evil. The most popular symbolizations of the serpent besides the phallus are wisdom, rejuvenation, longevity, fertility, convalescence and eternal youth. On the other hand, snakes according to Egyptian hieroglyphs are symbols of sickness. In the arts, a snake is used to signify decay and horror of death. The foregoing makes me feel that in certain cases, like case 1, such hallucination meant horror of death, degradation, disgrace with hopes for healing and rejuvenation, rather than a phallic, homosexual trend.

A few words concerning the interpretation of dismemberment may be added. Bromberg and Schilder consider the phenomenon closely connected with homosexuality, stating, however, that they have no knowledge if this motive played an important role in the psyche of their cases or whether the phenomenon was the outcome of alcoholic intoxication. While certain cases may warrant such interpretation, others do not. We must be aware that besides the ontogenetic libido development, there is also the historical element and other associations to consider. Dismembering is known to be

a form of punishment practiced by primitive societies, such as certain African tribes. It was especially the task of the women of the tribe to cut out the tongue, enucleate the eyes, and emasculate the enemy. The Tartars brought this form of punishment to Russia where it was still practised at the beginning of the seventeenth century. Ivan the Terrible was especially fond of cutting out the tongue or piercing the eyes of those who fell from his favor. A form of capital punishment in those times was that of dismembering the body in four parts after driving a cone-shaped device through it via the anus. The phenomenon of dismembering and castration may thus be regarded as symbolizing a most horrifying form of punishment, as well as signifying, in certain cases, fear of completely losing one's masculinity.

Finally, a brief comment on certain statistical data concerning "racial" participation in intemperance, may be made for example as to alcoholism among Jews. Adolf Meyer (in Emerson's "Alcohol and Man") tells us that he found among a group of alcoholics, the Jews to represent only 0.5 per cent; other nationals showed various participation, some to an extent as high as 37 per cent (which is in approximate harmony with the findings of others). If homosexuality is to be accepted as "the" cause of alcoholism, it would imply that certain nationals are particularly homosexual people, while others practically are not at all. The supposition is obviously absurd. Adolf Meyer thought that the difference is due to social habits. If so, then the question as to what causes the respective social habit is still to be answered. It has been held that the Jews are abstainers now because they indulged in ancient times. That explanation is inadequate for the reason that intemperance in the past would result in their immunity to alcohol rather than abstinence. In fact, so far as my observation goes, the Jews have a rather low tolerance to alcohol. Again, the Italians were also regarded in the past to be abstainers for the same reasons. While it remains true that Italians of the peasant population do not drink immoderately, the industrial worker indulges, which further refutes the theory of the role of alleged intemperance in the past.

Returning to the Jews, Feldman tells us that their religion did not at any time prohibit the use of alcohol. The only abstainers

known were the Rechabites (Jeremiah, XXXV). In fact, alcohol was recommended; it was advised that people drink *with* but not *between* meals which fact Feldman considers as an educational measure helpful for the avoidance of alcoholism. The writer, however, thinks that this alone could not account for the relative abstinence among contemporary Jews. In looking for further material, I find in Feldman's studies on ancient eugenics among Jews some significant data. It appears that the Jews early recognized the importance of eugenics and hygiene. Health was guarded by them to such an extent that for its sake the most enforced laws could be discarded. Contrary to the prevailing Lycurgean principles pursuing physical perfection, the Jews were cognizant of the importance of promoting mental health. In their view alcohol was detrimental to one's health which fact was apparently sufficiently impressed upon the population. Moreover, certain laws with reference to marriage and divorce, as well as marital hygiene were perhaps preventive of alcoholism. Still more, the social solidarity caused by their religion was evidently of paramount significance. In their further history, the severe struggle for existence, the necessity of overcoming most keen competition were probably further factors in the strengthening of this solidarity, as well as helpful in creating an imagination favorable for higher forms of compensation than alcohol. The keen struggle for existence and survival was probably also instrumental in conditioning among Jews the present prevailing feeling of contempt toward alcoholism. On the mental level this may be a concomitant expression of poor tolerance to alcohol on the physical, both assumed by me to belong to the forces of defense of the total personality. This phenomenon, called "homeostasis," or poetically labeled by von Monakow as "biological conscience," is a mechanism which automatically rejects what is unhealthy for the individual.

In summing up, attention is called to the striking trait of the total personality of our cases, the psychosomatic hypogenitalism. In connection with the latter, no "either-or" approach is permissible, meaning that hypogonadism does not necessarily produce homosexuality. However, it may render the individual "receptive" to develop homosexual traits. Corroboration of this is found in the female climacterium. Only few women become virilized after

involution; the majority retain their femininity, in spite of loss of specific ovarian tissue. The psychological constellation is important. It must also be borne in mind that from a psychosomatic angle, weak gonads are more vulnerable than vague latent homosexuality. Moreover, the psychological attitude toward the inferiority is of consequence. As to the sexual aspects of mental content, there was no evidence of infantile sexuality; the ventilated difficulties arose on the adult level.

The evidence pointed to multiplicity of factors instrumental in the release of the syndrome. The biological and historical development shows a gradual growth of possible causes alone with the psychobiological growth of the species. In studying the problem it is advisable to investigate the evolution of the syndrome. It is important to distinguish the original urge for intoxication, the biochemical affinity, congenital or acquired, and the secondary symptoms due to the formed habit. In doing so, an error of identifying solely psychopathology or physiopathology with etiology will be avoided. It is evident that certain manifestations regarded as causative might be, on the weight of our evidence, an outcome of psychosomatic deviations and readjustments due to the prolonged use of alcohol.

Alcohol appears to be a potent factor in the release of the syndrome. It operates on the vulnerable social and sexual levels of the personality. In connection with the latter, Miles (in Emerson, q. v.) stated that intoxication-like elements are present in certain normal human experiences, such as worship, reverie, esthetic enjoyment and those of sex, work and play. It is logical to think that individuals who have certain urges of the kind mentioned and who are unable to achieve them, will strive to remedy the situation. Alcohol may seem to serve the purpose, providing the opportunity and the presence of receptivity occur.

However, the results may not conform with expectations, and for the following reasons. In taking sex for an example, the writer wishes to call attention to Bâlint's differentiation of "fore pleasure," or sexual play, and "end pleasure," or orgasm in the gratification of sex. The former is for the adult a sort of game, limitless as to time, producing diffuse pleasure but unable to cause discharge

of excitement. The "end pleasure" is limited as to time, and if reached will produce a discharge of tension.

I believe that alcohol, which causes physiological imbalance of stimulation and depression of the integrated nervous system, will also result in a continuous urge for repetition of the excitation due to the mediated pleasure and necessity for discharge. Since the pleasure derived from alcohol is diffuse, it is akin to "fore pleasure." Not finding discharge it will try again and again. Perhaps a similarity of "end pleasure" is achieved in those cases which drink themselves to unconsciousness (oblivion), as seen in certain cases of dypsomania, or other periodic drunkenness. However, it must be remembered that Burridge showed that a concentration of a drug which apparently wipes out activity, exerts in the same time a strong stimulation. A "perverted" discharge may be seen in the epileptic-like equivalents or excitements produced by alcohol. It is not to be excluded that acute hallucinosis is a compensatory response to a catastrophic need for discharge of tension.

Validity of the syndrome

While our knowledge concerning the syndrome is incomplete, the foregoing suggests that acute hallucinosis is a valid clinical unit. The syndrome is commonly observed in connection with alcoholism. Further advance in knowledge of psychosomatic interrelationship will contribute to its better understanding.

Regarding the course, Kraepelin's differentiation of an acute and subacute clinical form may be accepted with the following comment: The former seems the accepted syndrome and offers no difficulties in diagnosis. With reference to the latter, consideration must be given to agitated depression or schizophrenia. In certain instances we seem to deal with an abortive form of the mentioned psychoses. In others, the differential and prognostic value lies in the total personality makeup, severity of biological conflicts, clinical manifestations with particular reference to affectivity and evolution of symptoms. No very definite criteria can be outlined. There is no difficulty in recognizing acute hallucinosis which may occur in the course of other psychoses, such as those quoted, providing one thinks of it. Acute hallucinosis-like syndromes which

may occur during middle or advanced age are most likely involutional episodes, usually precipitated by alcohol, and ought to be classified as such.

It is noteworthy that there is very seldom a recurrence of acute hallucinosis during the parole period. If patients are returned to the hospital it is usually because of marital, social or economic reasons. The recurrence of the syndrome in the individual's life is also infrequent.

Treatment

Treatment of the nonalcoholic group ought to be given on lines indicative for the respective disorders. However, some of the measures to be mentioned may also be applied to the cases in question.

The treatment of the alcoholic group is admittedly a difficult and often discouraging task. Still, in order to succeed one must remain optimistic, since otherwise there can be no success at all.

Treatment of the quoted cases may be divided into two stages: One, concerning early and immediate therapy; the other, referrable to the habit itself, thus essentially preventive. Alcohol must be withdrawn entirely, which applies to both stages. Anent early therapy, when the patient is admitted to a hospital within 24 hours, and especially if he shows an admixture of delirium, promotion of sleep by means of sedatives, baths, et cetera, is necessary. Liberal amounts of sweetened fruit juices are of assistance to combat toxicity. In advanced age, or in other patients with delirious features the writer has had good results with the strychnine therapy of Pagniez and Chaton. Strychnine Sulphate gr. 1/30 is given by hypodermic every three hours for 24 to 48 hours, as may be indicated. When hospitalized less promptly, sedatives, baths and hygienic measures are sufficient. In cases showing avitaminosis, indicated medication ought to be instituted, as well as other supportive treatment which does not require special comment.

The cases ordinarily admitted to this hospital from the city observation ward are in a state of convalescence. With few exceptions, their immediate care is relatively a simple matter. The majority of these patients are cooperative. They are given maximum freedom, such as a parole of the grounds and are urged to occupy

themselves along accustomed lines, unless otherwise indicated. Association with others is promoted. Medical treatment if indicated is administered. In mild depressive moods, Benzedrine Sulphate works well. However, the chief treatment lies in preparation of the patient for the future.

Success therein depends on: 1. The patient's ability to develop a sincere desire to stop drinking which in turn will make him seek advice on his own accord, 2. to understand that there can be no compromise concerning drinking, meaning discrimination as to form or concentration of liquor, 3. the ability to develop certain interests others than drinking, 4. correction of possible detrimental factors, physical or mental (ill health, sexual, marital, social and economic factors, and especially his attitude toward them).

The psychiatrist must be entirely objective, avoid persuasion or other methods which could be interpreted by the patient as preaching or moralizing.

Except for the rare patient who will stop drinking because of an "inner shock" referrable to a "catastrophic" apprehension over his health, the outlined requirements meet obviously with considerable resistance. The patient who has found consolation in alcohol for many years before hospitalization is not going to give up this delight easily. His detention against his will is not a helpful factor for psychotherapy, nor is it possible to correct many detrimental factors or his responses to them. Still, the understanding attitude of the doctor and his ability to strike with the patient a common note may prove helpful. On the other hand, no matter how smooth things are going in the hospital, the real test lies when the patient is outside.

The chief aim of psychotherapy is to help the patient to understand his limitations and what is more important that he be able to face them squarely, specifically with reference to his sexual and social life. The patients are usually quite ignorant as to sex, and its hygiene. For example, we still come frequently in contact with fear of masturbation as a cause of insanity, with the alleged necessity of sex relations for the sake of one's health or enforced abstinence for same reason, with an inadequate attitude toward the opposite sex, with compensation of sexual inferiority with excessive practice, et cetera.

Regarding the marital situation, a struggle for supremacy was found as a frequent feature. The struggle is provoked by the inadequacy of mating due to the tendency of the feminoid man to marry a masculine woman and vice versa. Excessive demands upon the partner or frigidity are further common sources of conflict. For instance, excessive demands upon the woman may result in connecting sex with feelings of disgust or development of frigidity on her part. The same demands upon the man in view of weakness of his libido may result in hostility, projections and psychical impotence. The man may seek in retaliation other companions than his wife with the consequence of creating a vicious cycle of complexities. A paramount factor in marital maladjustment in our cases seemed to be the poor technique of love. Since the sexual impulse in the majority of patients did not advance in its development much further than orientation upon the opposite sex, the sexual life is mainly sensual and, therefore, in many instances unsatisfactory to the partner.

Patients ought to be made to understand and be trained in the necessity of practising sexual relations for the satisfaction of both participants, rather than for his or her sexual gratification of an immediate desire. It implies that the proper management of the coitus is essential. The writer's experience with reference to the latter conforms with those of Bose and others. For example, extreme prolongation of coitus by the male is a sign of weakness of libido, or a desire on his part to gratify in a particular way his partner, which in turn is due to a feeling of inferiority. It is unhealthy and must be modified. On the other hand, rather early orgasm on the part of the man will leave the woman ungratified. Reeducation is necessary. Concerning the woman, repeated orgasms during one sexual congress are abnormal and should receive attention. Hysterical frigidity on the part of the woman, especially when she uses this as revenge, challenging the man to show his worth, ought to be most thoroughly investigated and corrected if possible. Refusal of marital relations must also be investigated and treated accordingly. Attempts to compensate diminishing libido with perversions is injurious and must be abandoned. While the treatment is chiefly psychotherapeutic along common sense lines, in certain instances hormonal therapy is indicated. If not in

conflict with religious or other beliefs, birth control is advised, because of the patients' rather low parental impulse which together with economic difficulties contribute to the conflict.

Social relations ought to be promoted with consideration of the patients' abilities and resources. As in the matter of sex, their limitations must be understood and digested by the patient, which will prevent compensations in a negative manner.

A most important point is to secure work, a point seemingly simple, which however cannot be overemphasized because of the fact that the majority of our cases are unable to develop any counterbalancing interest, other than work.

All measures designed to prevent indulgence ought to be especially enforced in cases who show vulnerability of the nervous system. These include those with such manifestations as are ascribed to avitaminosis and other factors which may promote early deterioration, individuals with a small *T* factor, or limited responsiveness of the brain, as deduced from convulsions or epileptoid equivalents of excitements, and those who hold extreme views, or are of a rather ambivalent affectivity.

Manhattan State Hospital
Ward's Island, New York, N. Y.

REFERENCES

Abraham, K.: The psychological relations between sexuality and alcoholism. Int. J. Psychoanal., January, 1926.

Bálint, M.: Eros and aphrodite. Int. J. Psychoanal., April, 1938.

Ballet, G.: Sur le caractère de certaines idées de la persécution. Le Mercredi Méd., No. 33, 1892.

Bleuler, E.: Textbook of Psychiatry. Macmillan Co., New York, 1929.

Bonhoeffer, K.: Die akuten Geisteskrankheiten der Gewohnheitstrinker. Fisher, Jena, 1901.

Bose, G.: The duration of coitus. Int. J. Psychoanal., April, 1937.

Bromberg, W., and Schilder, P.: Psychological considerations in alcoholic hallucinosis-castration and dismembering motives. Int. J. Psychoanal., April, 1933.

Burridge, W.: Alcohol and Anaesthesia. Williams and Norgate, London, 1934.

Cannon, W. B.: Bodily Changes in Pain, Hunger, Fear and Rage. Appleton Co., New York, 1929.

Carver, A. E.: The psychology of the alcoholist. Brit. J. Med. Psychol., August, 1931.

Cowles, E. S.: A new pathology and treatment of chronic alcoholism. Med. J. and Rec., May 6, 1931.

Davidson, G. M.: The involutional (mental) syndrome. PSYCHIAT. QUART., January, 1939.

Emerson, H.: Alcohol and Man. Macmillan Co., New York, 1933.

Feigenbaum, D.: On projection. Psychoanal. Quart., 5:303, 1936.

Feldman, W. M.: Alcohol in ancient Jewish literature. Brit. J. Inebr., 24:121, 1927.

——: Ancient Jewish Eugenics. Medical Leaves, Chicago, 1939.

Hart, H. H.: Personality factors in alcoholism. Arch. Neurol. Psych., 24:116, 1930.

Horney, K.: On the genesis of the castration complex in women. Int. J. Psychoanal., 5:50, 1924.

Ingham, S. D., and Nielson, J. M.: Thyroid psychosis. J. Nerv. Ment. Dis., 74:271, 1934.

Kraepelin, E.: Psychiatrie. Vol. 11, Barth, Leipzig, 1910.

Langdon-Brown, W.: The integration of the endocrine system. Lancet, November 23, 1934.

Lewis, N. D. C.: Psychological factors in hyperthyroidism. Med. J. and Rec., 122:121, 1925.

Mapother, E.: The physical basis of alcoholic mental disorders. Brit. J. Inebr., January, 1939.

Marañon, G.: The Evolution of Sex and Intersexual Conditions. Greenberg, New York, 1933.

Marchiafava, E.: The degeneration of the brain in chronic alcoholism. Proc. Roy. Soc. Med., July, 1933.

MacDougall, W., and Smith, M.: The effects of alcohol and some other drugs during normal and fatigued conditions. H. M. Stationery Office, London, 1920.

Osmont, A.: Le Symbolisme du Serpent. Durville, Paris, 1931.

Pagniez, P., et Chaton, P.: Le Traitement des Délires Alcooliques. Presse Médicale, No. 17, 1931.

Partridge, G. E.: Studies in the Psychology of Intemperance. Sturgis and Walton, New York, 1914.

Pohlisch, K.: Zur Pathogenese der akuten Halluzinose der Trinker. Monats. f. Psych. Neurol,, 63:82, 1927.

Ponte, E. de: Ein Fall einer Alkoholhalluzinose in der manischen Phase eines Zirkulären. Z. Neurol., 131:265, 1931.

Potter, E. S.: Serpents in Symbolism, Art and Medicine. Schauer, Santa Barbara, 1937.

Read, C. S.: Psychopathology of alcoholism. J. Ment. Sc., July, 1920.

Ruzicka, L.: Relationship of the sex hormone groups. Nature, 137:260, 1936.

Schneider, C.: Studies in alcoholic hallucinoses. Psychiat. Bull., January, 1916.

Starling, E. H.: The Action of Alcohol on Man. Longmans, Green Co., London, 1923.

Tatum, A. L., and Seevers, M. H.: Theories of Drug and Drug Addiction. Physiol. Rev,, 11:107, 1931.

Walthard, M.: Bezielhungen des Sympathico-adarenalen Systems zu den Fortpflanzungvorgängen im weiblichen Genitals. Münch. Med. Woch., No. 17, 1933.

Wolfenberger, M.: Akute Halluzinose der Trinker und sein Beziehungen zu Schizophrenien. Z. Neurol., 82:385, 1923.

Woolard, H. H.: The function of the pituitary and adrenal glands. Proc. Roy. Soc. Med., 27:271, 1934.

METRAZOL THERAPY IN MANIC-DEPRESSIVE AND INVOLUTIONAL PSYCHOSES*

BY MARK ZEIFERT, M. D.

In the course of our experience with metrazol therapy in schizophrenia, the relatives of a number of patients suffering from other disorders made frequent insistent demands upon us for treatment of their kin. We finally agreed to treat a limited number of such cases and selected those who appeared to be suffering from either the profoundest depressions or agitations.

Because only brief reference is made in the literature to metrazol therapy in these psychoses, the author feels that the results obtained in this series warrant a report. Young[1] treated 21 cases of depression. Of these, 12 recovered and 6 showed much improvement. Von Meduna and Friedman[2] in their recent compilation of reports from the entire world found a remission rate of 77 per cent in a series of 109 patients.

The present group consisted of 15 individuals. Eight of these were of the manic-depressive and seven of the involutional type. The cases were classified according to the criteria laid down by Cheney,[3] derived from the classification adopted by the American Psychiatric Association at its annual meeting in 1934.

Because of the limited amount of available material no attempt has been made to establish percentages of remission. The author reports his results in Table 1.

The technique of treatment was, with a few modifications, that described by von Meduna.[4] A citrated metrazol solution was employed, concerning which reference may be made to the author's original contribution.[5] The patients were all males. It will be noted that the number of convulsions induced in these cases is greater than that reported by Young.[1] It is our practice to induce convulsive seizures until improvement occurs unless some contraindication appears. In a few cases treatment was terminated early because of the insistence of the relatives on the patients' release. From our experience with 8,715 induced convulsions in the treatment of the psychoses we have learned that it is wise to induce a few seizures after the symptoms of mental disorder disappear.

*Submitted for publication, April 1, 1939.

TABLE 1. ANALYSIS OF 15 CASES OF MANIC-DEPRESSIVE AND INVOLUTIONAL PSYCHOSIS TREATED WITH METRAZOL

Number	Name	Age	Diagnosis	Duration of illness prior to admission (months)	Residence in hospital prior to treatment (months)	Total duration illness prior to treatment (months)	Grand mal reactions	Petit mal reactions	Total reactions	Initial dose (cc.)	Final dose (cc.)	Result
1.	S. B.	27	M-D—manic	½	3½	4	20	3	23	5.	18.	Much imp.
2.	M. K.	39	M-D—manic	½	2½	3	30	3	33	5.	16.	Recovered
3.	V. F.	42	M-D—depressive	3	5	8	30	0	30	5.	11.4	Much imp.
4.	J. G.	46	M-D—depressive	32	34	66	20	2	22	5.	11.	Much imp.
5.	I. H.	38	M-D—depressive	3	2	5	17	0	17	5.	12.4	Recovered
6.	E. L.	32	M-D—depressive	5	2	7	32	0	32	5.	12.4	Much imp.
7.	G. H.	40	M-D—depressive	6	3	9	30	0	30	5.	12.8	Much imp.
8.	M. S.	48	M-D—depressive	5	14	19	29	6	36	4.	16.2	Improved
9.	G. P.	50	Involl.-melancholl.	12	1	13	17	4	21	4.	11.	Much imp.
10.	P. R.	52	Involl.-melancholl.	1	24	25	27	3	30	5.	11.4	Much imp.
11.	B. W.	41	Involl.-melancholl.	24	1	25	24	4	28	5.	15.	Much imp.
12.	T. A.	45	Involl-paranoid	2	1	3	22	2	24	5.	13.6	Unimp.
13.	S. C.	46	Involl.-paranoid	12	1	13	8	0	8	5.	6.8	Much imp.
14.	C. P.	45	Involl.-paranoid	45	1	46	15	1	16	5.	14.4	Much imp.
15.	M. R.	48	Involl.-paranoid	4	1	5	21	1	22	5.	11.4	Much imp.

One may liken this to the process of developing and fixing in photography. The first part of the treatment produces signs of remission. The subsequent treatments are given to "fix" this "development." We have learned that failure to "fix" the remission results in "fading." Our patients stay in the hospital from four to six weeks after the last treatment so that "fading," if it occurs, may be detected and treated. This occurred in one of the first cases in this series and although treatment was then resumed, he was the only one of the group to show lack of improvement. Table 2 shows in condensed form, the disposition of these cases. None of the paroled cases has as yet been returned to the hospital.

TABLE 2. DISPOSITION AND CONDITION OF PATIENTS ACCORDING TO DURATION OF ILLNESS

Diagnosis, duration, condition	Still in hospital	Paroled
Manic-depressive, manic		
1 to 6 months		
Much improved	0	2
Manic-depressive, depressed		
1 to 6 months		
Recovered	1	0
7 to 24 months		
Much improved	0	4
25 to 66 months		
Much improved	0	1
Involutional, paranoid		
1 to 6 months		
Much improved	0	1
Unimproved	1	0
7 to 24 months		
Much improved	0	1
25 to 66 months		
Much improved	0	1
Involutional, melancholia		
7 to 24 months		
Much improved	0	1
25 to 66 months		
Much improved	0	2

DISCUSSION

Although we are aware of the fact that the syndromes treated here belong to the self-limited group, it is important to note that two-thirds of the cases in this series had been ill more than six

months when treatment was begun. Four of the 15 individuals had been sick from two to five and one-half years. It is commonly accepted that even in this comparatively benign group of mental disorders, the prognosis is guarded where the duration exceeds more than two years. It should be further noted that none of the patients in this series had shown any sign of improvement until treatment was administered.

That there was a significant relationship between the treatment and the remission is shown by the fact that each patient required a different number of convulsions and that no patient began to show improvement until eight or ten convulsions had been induced. The process of improvement then became a gradual one until remission was reached.

We are unable to explain why our group of patients required more treatment than those reported by Young[1] except on the basis of the greater average duration of illness in this series. That this may not be the complete explanation is shown however, by cases 4 and 14 (Table 1), both of whom required less than the usual amount of treatment but actually had the longest durations of illness. Instances like these point of course to the fact that each patient is an individual and that, as is true in all types of psychiatric treatment, each patient requires individual treatment.

In evaluating a report of this type it is important for the reader to have an idea of the criteria that were used in determining the degree of remission in each case. We are conscious of the fact that such criteria vary from hospital to hospital and from locality to locality, regardless of the desire of the observers to be objective. The writer feels that even though an attempt is made to apply severe tests and to use high standards for the labels "recovered" and "much improved," a more satisfactory view may be obtained by employing a standard which is common to all hospitals and communities. This standard refers to whether or not the patient is suitable for parole. Many reports appear in the literature that purport to show high rates of improvement under special methods of treatment. When the parole rate is studied it is found that the percentage is relatively not so high. The purpose of a hospital is to enable the patient to get along in the community and the question, "Will he be able to adjust outside?" must be an-

swered affirmatively before a patient is released from any institution. It is significant therefore, to note that of the 15 cases in this series, 13 are now at home on parole and one is awaiting parole. Regardless of the criteria used for estimating degree of remission in these cases, the fact remains that 13 improved sufficiently to warrant their release.

The writer does not offer any explanation for the rationale of this form of treatment. There is insufficient evidence at this time to point to either a biochemical or psychologic attack on these disorders, nor for that matter, are the disease processes themselves clearly understood. Suffice it to say that be the improvement the result of biochemical or of psychologic alterations, the results reported here and elsewhere, warrant further trial of this method in the treatment of the manic-depressive and involutional psychoses.

Summary

1. Treatment of the manic-depressive and involutional psychoses with metrazol has been described.

2. The necessity of inducing an adequate number of convulsions has been emphasized.

3. In a series of 15 cases treated with metrazol, 13 are now home on parole and one is awaiting parole.

Brooklyn State Hospital
681 Clarkson Avenue
Brooklyn, N. Y.

REFERENCES

1. Young, R. H., and Young, G. A.: Treatment of the psychoses. J. A. M. A., 112:6:496, February 11, 1939.
2. Meduna, L. von., and Friedman, E.: The convulsive-irritative therapy of the psychoses. J. A. M. A., 112:6:501, February 11, 1939.
3. Cheney, C. O.: Outlines for psychiatric examinations. The State Hospitals Press, Utica, N. Y., 1934.
4. von Meduna, L.: Die konvulsionstherapie der schizophrenie. Carl Marhold. Halle., 1937.
5. Zeifert, Mark: The etiology and prevention of "lung abscess" in metrazol therapy. PSYCHIAT. QUART., 13:2, April, 1939.

A THEORY FOR THE CAUSE OF DEATHS IN ACUTELY DISTURBED MENTAL PATIENTS

BY WALTER A. THOMPSON, M. D., C. M.

It has been the experience of most physicians associated with hospitals for the care and treatment of the mentally ill, to see disturbed or excited patients suddenly develop signs of collapse with hyperpyrexia and die within a short period of time. In most cases there have been no previous circumstances to suggest expected death. It is the purpose of this investigation to add to the statistical study of these cases and to advance the writer's opinion as to the cause of these sudden deaths.

Before proceeding with the discussion, several typical examples of the cases under consideration will be given.

Case Reports

Case 1. L. F., male, white, age 23, was admitted to the Rockland State Hospital on July 1, 1935. Duration of illness two months; diagnosis—dementia præcox, catatonic type. The patient improved enough so that he was tried on parole, only to be returned September 14, 1936. At this time he was noted as talkative and overactive. On the eighteenth he had become very restless, agitated, excited and assaultive, banging his head against the walls. On the nineteenth he continued very overactive and required restraint. On the twenty-first he received sedative wet pack treatment. In the evening he was very active, but was allowed out of the pack. At 4:20 a. m. it was noted that he was sleeping. At 6:20 a. m. he was found dead. His temperature was not recorded. An autopsy was performed with no abnormal findings. The brain was considered normal, the heart presented no pathology, the lungs were slightly congested and the spleen was enlarged. No apparent cause of death was determined. The stated cause of death was acute exhaustion of the insane.

Case 2. E. G., female, white, age 17, was admitted to the Rockland State Hospital, May 23, 1932. Duration of illness one month; diagnosis—manic-depressive psychosis, manic type. On admission she was very overactive, resistive and overtalkative. She received

sedative pack treatment immediately upon admission. Her struggles and overactivity continued. On May 25 at 7 p. m. she had a sudden weak spell with imperceptible pulse. At 7:25 p. m. her temperature was 107.6° F. with the pulse rate 144. Generalized convulsions developed. At 12 midnight her temperature was recorded as 109.6°. At 12:25 she died. No autopsy was permitted and the cause of death was given on the death certificate as acute maniacal excitement.

Case 3. M. C., female, white, age 46, was admitted to the hospital on May 29, 1933, with a duration of illness of 8 days; diagnosis—manic-depressive psychosis, manic type. On admission she was very violent, resistive and assaultive, threw herself about, struck at the nurses and shouted. At 7:30 p. m., a few hours after admission, her temperature was found to be 108° F. Her pulse was imperceptible and she appeared to be developing shock. She continued overactive, resistive and attempting to shout. At 8:45 she was unconscious with convulsive jerkings of the limbs. Following a cool sponge at 9:00 p. m., her temperature dropped to 104°, but rapidly returned to 108°. The apex beat was 160 per minute, pulse unobtainable. Lumbar puncture showed clear fluid under much pressure. Convulsive movements continued. At 10:00 p. m. she died. Autopsy showed a heart of normal size, the right ventricle dilated slightly. The lungs were congested, spleen enlarged; the brain was considered negative, dura normal, pia congested. The pathologist could find no apparent cause of death. The stated cause of death was acute maniacal excitement.

Case 4. G. P., female, white, age 30, was admitted to the hospital April 7, 1933, with an illness of 7 days duration; diagnosis—dementia præcox, catatonic type. On admission she was resistive, restless at times and retained fixed postures. On April 9 she was restless and stuporous. During the afternoon of this day she became very excited, ran about the ward, pounded the furniture with her fists, and was placed in restraint. At 11:45 p. m., a slight muscular twitching of the facial muscles was noted. At this time she was very weak, with a temperature of 109° F., pulse 180. At 5 a. m. she was in a state of collapse but still noisy and resistive. At 5:35 a. m. she died. An autopsy was performed and revealed the heart to be small with the right ventricle flabby, thin and dilated.

There were no other findings and there was no apparent cause of death. The stated cause of death was acute exhaustion of the insane.

Case 5. D. K., female, white, age 39, was admitted to the hospital December 20, 1933, duration of illness one month; diagnosis—dementia præcox, paranoid type. On admission she was noted as hallucinated, very active, assaultive and disturbed. Her behavior continued thus for over two years. On February 14, 1935, she was noted as having been very active, more so than previously. She received sedative pack treatment at this time. At 9 a. m., she was placed in the continuous tub, was very assaultive and noisy. At 10:30 a. m. sodium alurate grains 3 were given by mouth. At 12:30 p. m., she was singing loudly. Between 1 and 2 she was sleeping and at 2:30 p. m. she was noted as "flushed," resting quietly. At 3:25 she was removed from the tub and at this time was cyanotic and pulseless. Stimulants were given, including oxygen therapy. Her temperature was 108° F., the radial pulse could not be obtained. She died at 4:15 p. m. An autopsy revealed slight thickening of the pericardium. Heart muscle darker than usual, increase of fat over the right ventricle. The left ventricle was normal, the right ventricle slightly dilated. Lungs were filled with a frothy blood in the bases. The spleen was enlarged, the meningeal fluid was increased in amount, especially in the midline and laterally. No hemorrhage, thrombosis, softening, et cetera, were found. The autopsy revealed no apparent cause of death and the stated cause was acute myocardial failure.

Case 6. M. E., female, white, age 26, came to the hospital, November 14, 1937. The duration of illness was two years; diagnosis—psychoneurosis. On November 19 she was noted as depressed and seclusive. A week later she was overactive, assaultive, running about the ward. The following day she continued overactive and November 29 was disturbed, assaultive, destructive and very overactive. She was placed at this time in a sedative pack. At 8:30 p. m. she had a convulsion and was still overactive. She was removed from the pack and had slight nasal bleeding. She then appeared in collapse and despite stimulants died at 6:15 a. m. No. T. P. R. was recorded. An autopsy was done which revealed the following. Heart—normal in size, left ventricle normal, right ventricle dilated,

muscle flabby; lungs—swollen and edematous with a foamy, watery fluid; brain—increased fluid beneath the pia, the substance was normal. The stated cause of death was dilatation of the heart.

These cases are examples of what is meant by sudden, unexpected death in disturbed or excited patients. It may be stated here that the duration of hyperactivity, with hyperpyrexia and cardiac collapse, varied from one-half day to three days. The disturbed period previous to the acute symptoms lasted in some cases approximately a month. Derby[1] recorded an average duration of the acute illness in his cases up to 42.6 days.

In a recent article Shulack[2] gives a good review of the meager literature dealing with this condition and without further embellishing the record with this literature, a study of the cases which have occurred in the Rockland State Hospital during the period between March, 1931, and March, 1938, will be made.

During this time there occurred a total of 2,038 deaths, of which 1,028 were females and 1,010 males. Of these, 24 females and 16 males died from causes assigned to "acute exhaustion of the insane," after excluding all those which could not be included under this heading above. These figures indicate that 2.33 per cent of the female deaths and 1.58 per cent of the male deaths were attributed to such cause. Shulack shows that 1.08 per cent of his deaths were acute exhaustive deaths, a figure somewhat lower than the writer's.

These deaths may be classified in the following age groups:

Age at death	No. of cases
10 to 20 years	4
20 to 30 years	9
30 to 40 years	10
40 to 50 years	13
50 to 60 years	3
Over 60 years	1

The greater number died between the ages of 30 and 50; half of these were males and half females. Most of the male deaths occurred in the older age group, that between 40 and 50, whereas the majority of the female deaths occurred in the 30- to 40-year group. In the main these results correlate with those of Shulack and are definitely less than the standard life span.

Of next consideration is the mental diagnosis. The table below lists them according to such diagnosis.

	Males		Females	
	Number	Per cent	Number	Per cent
Manic-depressive psychosis:				
Manic type	1	6	10	42
Depressed type	2	13	1	4
Mixed type	1	6	4	16
Dementia præcox:				
Paranoid type	5	31	2	8
Catatonic type	3	19	2	8
Involutional psychosis	0	0	2	8
General paresis	1	6	0	0
Psychoneurosis	0	0	1	4
Psychosis with epilepsy	1	6	0	0
Psychosis with epidemic encephalitis	1	6	1	4
Psychosis with cerebral arteriosclerosis	1	6	1	4

From these statistics it is observed that over 50 per cent of the female deaths were in the manic-depressive group, with the greater portion of these of the manic type; and that about 50 per cent of the male deaths were in the schizophrenic group. Shulack noted that his findings were essentially the same as far as the female deaths were concerned, but the writer's percentage of male schizophrenic deaths was much higher. As the group of cases is quite small this is, no doubt, of little significance. However it merits attention that the so-called exhaustive deaths occurred in various psychoses other than manic-depressive and schizophrenic reaction.

In nine cases an autopsy was performed. Five of these were upon females and four were on males. A review of the postmortem findings disclosed the following:

Findings	Frequency
Heart normal in appearance	4
Heart noticeably small	3
Heart enlarged	0
Right ventricle dilated and thin	7
Lungs congested	7
Spleen enlarged and congested	5
Meninges congested	3
Brain edematous	4
Brain apparently normal	5

It may be taken for granted that the other organs were consid-sidered negative pathologically. It was the opinion of the pathologist in each case that there was no actual lethal condition. The cardiac findings are those that are found in any number of diseases in which the heart is secondarily involved. To be noted particularly is that the heart was not enlarged but either normal or smaller than normal; that the right ventricle was dilated and thin in 7 of the 9 cases and that the lungs were congested in the same number of cases. In 5 cases the brain appeared normal and in the other 4 cases it was congested or edematous. No detailed microscopic study of the brains was made.

At this point certain prominent symptoms before death will be mentioned. In 21 of the 40 deaths a temperature over 106° F. was recorded and in 10 others whose deaths were quite sudden the temperature was not taken. In the remaining cases the temperature averaged between 104° and 106° F. The possibility that the temperature was highly elevated in those cases in which it was not recorded is, the writer feels, considerable. In the case of one patient who died suddenly, a postmortem temperature of 110° F. was registered. Most of those in whom it was not recorded died at night or collapsed suddenly so that efforts at resuscitation consumed the period before death. In 28 cases there were signs of cardiac collapse, 17 of these having a weak or imperceptible pulse with pallor and cold, clammy skin; 11 presented cyanosis with hot, dry skin. In six individuals there were convulsions and in three moderate hemorrhage from mucous membranes. A lumbar puncture was made in two cases before death; each showed clear fluid under much increased pressure.

Evaluating the important postmortem findings and outstanding symptoms one finds the following to be frequent: hyperactivity, hyperpyrexia, cardiac failure, cardiac collapse with dilatation and thinning of the right ventricle in a heart normal or smaller than normal in size, pulmonary congestion and splenic enlargement with congestion. Congestion of the meninges may be noted in passing, with the fact that the brain appeared normal in five of the nine autopsies performed. Convulsions and moderate hemorrhage from mucous membranes were less prominent but perhaps important.

An attempt will now be made to correlate the symptoms of the postmortem findings. In about 70 per cent of the autopsies dilatation of the right ventricle was found and in at least 70 per cent of the deaths evidence of cardiac collapse was noted. It can at once be assumed that the deaths are associated with dilatation of the right ventricle. Is this cardiac pathology due to (a) destruction of the impulse at the sino-auricular node, (b) excess or undue strain placed upon the heart by the extreme exhaustive behavior or (c) as may be indicated by the hyperpyrexia associated with it, is it of central origin? The two former can readily be ruled out by the fact that at no time during the course of the extreme hyperactivity is there any irregularity of the heart beat. Although it is found to be very rapid and weak the pulse usually remains rhythmically regular. Too, the hyperpyrexia is not explained. Again, if due to the strain placed upon it by the exhaustive behavior the left ventricle would be enlarged and either dilated or hypertrophied. Therefore, as will be indicated below, the writer feels that it is of central origin.

The pulmonary congestion may be explained on the basis of ineffectual circulation due to the weakened right heart, although Meakins[3] states that with dilatation of the right ventricle pulmonary congestion does not occur. However the deaths are not respiratory in nature and the congestion appears to be on the basis of circulatory failure.

Several viewpoints previously expressed as a cause of these deaths may now be considered. Laurence[4] suggested vagal hypertonia. With vagal hypertonia the heart rate would at first be slow, with finally cessation of the auricular and then the ventricular beat. Later there may be "escape from the vagus" with the ventricle having its own rhythm, rapid but irregular. Thus vagal hypertonia as a cause of the deaths can probably be ruled out.

Stefan[5] suggested sudden atony of the circulatory system, Derby[1] and Davidson[6] suggested toxemia causing a cardiovascular death and Shulack's impression[2] was that there existed a parasympathetic-sympathetic imbalance in a constitutionally predisposed individual with a cardiovascular system unable to bear the functional load of continued hyperactivity.

Before proceeding with a discussion of these theories, it should be stated that sudden deaths as described by Laurence,[4] in which there was no high fever or hyperactivity before death, should not be compared with the type of death under discussion. Such deaths are possibly due to undue emotion causing vagal hypertonia as he suggests, but further study would be necessary to prove this assertion.

Returning to the above-suggested causes, let us consider toxemia. With an increasing toxemia, which must be assumed inasmuch as death results, there would be the so-called "septic temperature," probably a gradual rise at first with moderate fluctuations from time to time. In the cases under consideration usually there is a rapid rise with a plateau around 106° F., with elevations above this if there is any change. It seems safe to assume that there would not be a sudden, overwhelming amount of toxin produced in the body and thrown into the circulatory system. Further, there has been no other evidence, either on physical examination or postmortem findings, of a toxemia. Again, a source of these toxins has not been disclosed. The writer feels that this theory, in itself, can be discarded.

Sudden atony of the circulatory system does not explain the deaths as the hyperpyrexia is unaccounted for. Undoubtedly there is a circulatory collapse but it appears to be merely a symptom and not a total cause.

Whether there exists a parasympathetic-sympathetic imbalance would be difficult to prove, but this point will be left for later discussion. Injury to an emotionally sensitized nervous system by toxemia and hyperpyrexia is also difficult to evaluate, but as noted above the presence of toxemia has been discounted; in fact the evidence is rather against it.

Instead of these suggestions for etiology I would here like to refer to what may be called the "hypothalamic syndrome" as the cause of death. It has been shown by Beattie, et al.,[7] that stimulation of the hypothalamus activates the sympathetic-adrenal system. Beattie, Brow and Long[8] showed that hyperglycemia resulted from such stimulation, as did Fisher, Ingram and Ranson[9] and Davis, Cleveland and Ingram.[10] DeJaegher and van Bogaert[11] showed the hypothalamus to be for carbohydrate metabolism, an essentially

similar result. Kabat in 1936,[12] Kabat, Ranson and Magoun[13] and van Bogaert[14] showed that tachycardia and increased rate of pulse were the result of stimulation of the hypothalamus. Ranson and Ingram,[15] Isenschmidt and Schnitzler[16] and Ranson, Kabat and Magoun[17] found it to be the heat-regulating center. Rowntree,[18] Beattie and Sheehan,[19] Camus and Roussy[20] and Bailey and Bremer[21] presented evidence that the hypothalamus was the center for control of water balance. Kreig, Fulton and Ingraham[22] found there was a center in the hypothalamus which when stimulated caused hyperexciteability and Bard[23] showed that it was the center for manifestation of rage and emotion (hyperexciteability?). It would lead too far afield to discuss here the different areas of the hypothalamus involved in the display of these pathological symptoms but it is generally accepted that the hypothalamus does control these functions.

In the cases under consideration the following hypothalamic symptoms were noted: 1. Hyperexciteability, 2. hyperpyrexia (imbalance of body temperature), and 3. tachycardia with increase of pulse. The convulsions may possibly be due to fluid imbalance with resultant edema of the brain.

One important hypothalamic symptom not noted was hyperglycemia. On reviewing the records it was discovered that blood sugar determinations were not made in any of these cases.

Comment

The above observations may be seen to indicate an irritative lesion of the hypothalamus. This might further suggest that the whole picture of mania (hyperexciteability) can be explained on the basis of hypothalamic pathology. This would indicate an organic cause of hyperexciteability and therefore of mania. Again, hypothalamic stimulation may occur only in certain cases of mania and may be due to some extraneous factor. To further indicate this latter supposition it may be noted that the hyperactivity of these cases is an accentuation, in most instances, of a previous overactivity. What this factor may be is problematical. That it is a drug or secretion acting on the sympathetic system is possibly indicated by the fact that ergotamine tartrate (Gynergen), a sympathetic-depressant, has been shown by Baber and Tietz[24] to control

hyperexciteability. This work may perhaps be construed to implicate the hypothalamus as the seat of disturbance.

Future investigation of acute exhaustive deaths should include detailed microscopic observation of this region of the brain. Blood sugar determinations are recommended. The trial of ergotamine tartrate is suggested as treatment for hyperexciteability.

Summary

The signs, symptoms and postmortem findings of 40 mental patients who died from "acute exhaustion of the insane" have been shown to be related or possibly due to dysfunction of the hypothalamus. Although the number of cases is small and the results cannot be considered conclusive, the writer feels that it will augment the meager literature on the subject.

Rockland State Hospital
Orangeburg, N. Y.

REFERENCES

1. Derby, I. M.: Manic-depressive "exhaustive" deaths. PSYCHIAT. QUART., Vol. 7, No. 3, July, 1933.
2. Shulack, N. R.: Sudden "exhaustive" deaths in excited patients. PSYCHIAT. QUART., Vol. 12, No. 2, April, 1938.
3. Meakins, J. C.: Textbook of Medicine. C. V. Mosby, St. Louis, 1936.
4. Laurence, J. Z.: A case of sudden death without any adequate postmortem experience. Brit. M. J., London, i, 376:1860.
5. Stefan, H.: Natural death as a result of great excitement in acute psychoses without actual anatomically demonstrable cause. Ztschr. f. d. ges. Neurol. u. Psych., 152:1935.
6. Davidson, G. M.: Death in certain psychoses. Amer. J. Psychiat., 91, July, 1934.
7. Beattie, et al: The vegetative nervous system. Research N. and M. Diseases Proc., 9:249, 1930.
8. Beattie, J., Brow, G. R., and Long, C. N. H.: Physiological and anatomical evidence for the existence of nerve tracts connecting the hypothalamus with spinal sympathetic centers. Proc. Roy. Soc., B., 106:253.
9. Fisher, C., Ingram, W. R., and Ransom, S. W.: Relation of hypothalamico-hypophyseal system to diabetes insipidus. Arch. Neur. and Psychiat., 34:124, July, 1935.
10. Davis, L., Cleveland, D., and Ingram, W. R.: Carbohydrate metabolism. The effect of hypothalamic lesions and stimulation of the autonomic nervous system. Arch. Neur. and Psychiat., 33:592.
11. DeJaegher, M., and Bogaert, A. Van: Regulation de la tension arterrille et hypothalamus. C. R. Soc. Biol., 118:1935.
12. Kabat, H.: Electrical stimulation of points in forebrain and midbrain; the resultant alterations in respiration. J. Comp. Neur., 64:187, 1936.
13. Kabat, H., Ransom, W. R., and Magoun, H. W.: Electrical stimulation of the hypothalamus. Proc. Soc. Exp. Biol., 31:541.
14. Bogaert, A. Van: The thalamic and Parkinsonian types of infundibular tumors. The occurrence of glycoregulatory and so-called endocrine disorders. Arch. Neur. and Psychiat., 19:377, 1928.

15. Ransom W., and Ingram, W. R.: Hypothalamic regulation of body temperature. Proc. Soc. Exp. Biol. and Med., 32:1439, 1935.

16. Isenschmidt, R., and Schnitzler, W.: Beitrag zur Lokalisation des der wärmeregulation vorstehenden Zentralapparates im Zwischenhirn. Arch. f. Exp. Path. and Pharmak., 26:202, 1914.

17. Ransom, W., Kabat H., and Magoun, H. W.: Electrical stimulation of the hypothalamus. Proc. Soc. Exp. Biol., 31:541.

18. Rowntree, Leonard G.: The water balance of the body. Phys. Rev., 2:116, 1922.

19. Beattie, J., and Sheehan, D.: The effects of hypothalamic stimulation on gastric motility. J. Phys., 81:218, 1934.

20. Camus, J., and Roussy, G.: Les fonctions attribuées a la hypophyse. J. de Phys. and de Path. Gen., 20:509, 1922.

21. Bailey, P., and Bremer, F.: Experimental diabetes insipidus. Arch. Int. Med., 28:773, 1921.

22. Kreig, W. J. S., Fulton, J. F., and Ingraham, F. D: Emotional disturbances following experimental lesions of the base of the brain (prechiasmal). J. Phys., 67:27. Amer. J. Physiol., 20:353.

23. Bard, P.: A diencephalic mechanism for the expression of rage with special reference to the sympathetic nervous system. Amer. J. Phys., 84:490, 1928.

24. Baber, E. A., and Tietz, Esther B.: The effect of ergotamine tartrate on the behavior of psychotic patients. J. of Med., Ohio, 17:551, 1937.

SYMPTOMS AND PREVIOUS PERSONALITY IN PRISON PSYCHOSES

BY SAMUEL C. KARLAN, M. D.

It has been noticed that in the organic psychoses, the same causative factor can produce entirely diverse manifestations in different individuals. In fact, the form which a psychosis takes in these cases has practically nothing to do with the etiology. This relationship has been studied by many workers with similar conclusions. Thus Ziegler[1] stated, "The character of delirium, whatever its exciting cause, is largely determined by the personality of the individual and as such shows a great variety of reactions." Schilder[2] noted: "In paresis, the personality and constitution of the individual play an important part. Somatic agents will provoke different reactions according to the constitution of the individual." Curran and Wolfe[3] in an extensive study of delirium observed: "The psychobiologic content of delirium was dependent in large part on the individual equipment and experience of the subject. Patients during repeated reactions presented recurring and readily recognizable individual features. Paranoid misinterpretations were common, though systematization was rare in persons who were usually suspicious."

Singer,[4] in a criticism of the present classification of the functional psychoses according to their form stated: "In the organic psychoses, the form and character of the adjustments that the patient will make under the conditions of his illness depend on his personality and his persistent habits of adjustment . . . The form of the psychosis does not depend on the nature of the illness but is derived from the personality of the person who is ill. Reasoning by analogy, it seems permissible to conclude that in all psychoses, just as in those which accompany such structural lesions as those of dementia paralytica, cerebral arteriosclerosis or toxic delirium, the form of the psychosis, no matter what the nature of the illness, depends on the personality of the person who is ill." Singer made this last conclusion on reasoning by analogy because of the paucity of knowledge with respect to the etiological relationships in the functional psychoses. The writer has found however that a detailed study of this nature is feasible in one of the functional psy-

choses where there is apparently a clear etiological agent. This is the group usually known as prison psychosis (designated in the classification as psychosis with psychopathic personality). Here the psychotic episode is a reaction to the prison environment. As in the deliria where patients of diverse personalities become psychotic because some toxic or metabolic disorder upsets their mental balance, in the prison psychoses, inmates of different constitutions are deranged by the restrictions of the environment. As in the organic psychoses, the symptomatology is as variable as the individuals afflicted. The common denominator of the various types of prison psychoses is that they are situational reactions and subside in a relatively short period. The symptoms manifested may however include depression, excitement, confusion, paranoid delusions, hallucinations and compulsive acts.

It has long been the impression of the writer that in the prison psychoses, the symptomatology is directly related to the previous personality of the patient. In order to corroborate this, a study was made of the last 50 cases of prison psychosis admitted to the Dannemora State Hospital. In order to obviate any question of diagnosis, all but one were investigated after they had recovered. Forty-four patients were officially diagnosed as psychosis with psychopathic personality, five were diagnosed as psychosis with mental deficiency, and one was diagnosed as reactive depression. An estimate of their personality was made by a study of their previous histories, the reports of the probation officers, the statements of the relatives when available, the psychiatric reports of their behavior in prison prior to their psychoses, and their general behavior after recovery. In 22 of the cases, it was also found suitable to administer the Humm-Wadsworth Temperament Scale.[5] This is a "Yes-No" questionnaire of 318 questions, which gives the subject a score in each of the six different components of personality, namely: manic, depressive, autistic, paranoid, epileptoid, and hysteroid. These terms have the usual psychiatric implications except that hysteroid is used in the sense of antisocial and malingering (according to the theories of Rosanoff[5]). The scoring in this test shows which of these trends are accentuated in the subject and which are not remarkable. The patient is given a rating with respect to each of these characteristics. This ranges from +3 to —3,

+3 indicating very marked accentuation of the given character trait and —3 its almost complete absence. In addition, for the 17 cases who had had more than one admission, I compared the symptoms of the different episodes, although I have already indicated in a previous study[6] that they are very similar.

General Findings

In 39 cases the symptomatology showed a close relationship to the previous personality and to the score on the temperament scale. In seven the correlation was fair. In four the information was inadequate or the correlation poor. Of the 17 cases who had more than one admission, 16 showed very similar symptoms during both episodes.

The following are short abstracts of some of the cases:

Case 1. D. L., a patient with manic and depressive trends. He had always been markedly restless; he ran away from home at the age of 12 and roamed around the country. He was subject to moods of depression which lasted for variable periods. When free he was able to alleviate these episodes by means of narcotics. When he could not secure morphine, he used alcohol to excess. He was envious of those more fortunate than he but would not make a sustained effort to achieve any success in life. He therefore chose what he called "the easiest way to make money" and engaged in robbery. He became psychotic after having been in prison for three years. He was depressed, suicidal and had feelings of guilt. He accused himself of killing someone by introducing him to drugs and thought that he himself would be murdered in revenge. In the temperament scale he showed marked manic (+3) and depressive (+2) trends. In this case therefore, a good correlation could be found between the patient's previous history and temperament scale scores and the symptoms shown during the psychotic period.

Case 2. J. C., a man with manic trends. This patient was restless and roamed about the country continuously. He was sociable, cheerful, somewhat euphoric and grandiose. He frequently boasted of his physical prowess. Although he had been provided with many jobs, he could never keep any for more than a few weeks. During his travels, if any one obstructed his desires, he did not

hesitate to engage in brawls and fights. He was arrested in Oregon for engaging in a street fight. When he arrived in jail he proceeded to demonstrate to the guards that he could "lick" four of them. He was therefore transferred to a ward for the criminal insane and was kept in restraint for several days. After release, he came to New York and was arrested for stealing some chickens. While his accomplices received suspended sentences, he was given a sentence of 10 years because he frequently made sarcastic remarks to the judge, such as, "You slay me!" "Your kindness overwhelms me!" and "You don't say so." When asked why he spoke to the judge in this manner, he answered, "I wanted to tell him what I thought of him. You cannot get justice here anyhow." After admission to prison he continued to act in a similar fashion. He boasted of his physical prowess and disobeyed orders. He scoffed at the authorities when he was reprimanded and finally became markedly assaultive and excited. He became so unmanageable that he had to be transferred to the Dannemora State Hospital. It will be noted that this patient managed to keep out of trouble most of the time by traveling continuously and thereby giving vent to his manic constitution. However, when he was restricted in prison, his manic actions were such as to have him considered psychotic.

Case 3. S. C., a patient with a paranoid trend. This man had always been moody, quick tempered and quarrelsome. He had very few friends because he had always been suspicious. Moreover, he was at times inclined to commit violence on the basis of his suspicions. He had two psychotic episodes which illustrated this tendency. During the first one, he became disturbed and excited because the other inmates were talking about him and calling him names such as "fag" and "punk." He believed that they were influencing the officials against him and were persecuting him. In his second episode, he complained that the other inmates were calling him names and to escape this he made two genuine suicidal attempts. After he had recovered from the second episode, he had a fight with another inmate. This led him to believe that the latter was seeking to injure him all the time. He therefore fashioned a knife from a buckle and severely lacerated his suspected enemy. In keeping with these actions, he showed marked paranoid (+3) and moderate depressive (+1) trends in the temperament scale.

Case 4. C. P., a patient with paranoid trends. He had always worked steadily and had never come into conflict with the law prior to the crime mentioned below. However, his family reported that he had always been suspicious. He was held up at one time and therefore bought a gun and never left his home without it. On one occasion, he had an altercation with another man in a saloon and shot him. He became psychotic after he had been in prison for a year. He believed that others looked badly at him and were trying to get a chance to do him harm. He thought that they were watching him closely. He also heard people say to him at night, "Look out! They're going to kick the s— out of you if they get a chance." His reaction was an elaboration of his generally suspicious nature.

Case 5. W. R., a patient with hysteroid trends. His was a long criminal history, involving arrest for burglary and robbery a great many times. He was a gangster who had been attempting to "beat the law" all his life. He was unstable, complaining and combative. He always plotted for some real or fancied privileges at prison. He attempted to hold up the other inmates for tobacco or delicacies. At one time, he unsuccessfully tried to simulate insanity to avoid being sentenced. On the temperament scale, he showed very marked (+3) hysteroid (antisocial, malingering) tendencies. This patient illustrated these traits in his six admissions to institutions for the criminal insane. Most of the symptoms he showed belong to the buffoonery syndrome type although he occasionally had some slight depression or excitement. It was the impression of the examiners that many of the symptoms were purposeful. During his last admission he admitted that he had been malingering in order to be admitted to the state hospital.

Case 6. W. D., a patient with autistic trends. This boy, 18 years old, had never had any supervision as his mother had had to work to support him. He had had little money and no clothes and developed a marked inferiority feeling which he occasionally sought to compensate by surliness and bravado. He had always had some facial mannerisms. He had been difficult to control at home, and at one time ran away. He showed marked autistic (+2) and paranoid trends on the temperament scale. After two months in prison, his facial mannerisms became increased, and he was rest-

less and surly. He was found climbing along the pipes and accused the officers of bothering him. He recovered completely in two months.

Case 7. A. R., a patient with epileptoid trends. His psychosis began five months after his admission to prison. Prior to his arrest, he had wandered around the country a great deal, had been intoxicated frequently and had had occasional periods of abnormal behavior. At one time, he suddenly caused a disturbance in a beer garden. On the temperament scale, moderate paranoid (+1) and marked epileptoid (+2) trends appeared. His psychosis consisted of sudden violence in the prison mess hall without apparent cause. He punched himself, was destructive to his cell and was confused. Later there was amnesia for the event. Another similar spell occurred two years afterwards. He was considered a possible epileptic but no convulsions had been observed.

Comment

The psychopath who comes into conflict with the law is essentially a person who follows his whims, lives in the present without regard to the past or the future, is unstable and capricious, cannot keep a job for any extended period of time and is notable for his lack of foresight and dearth of sustained effort in the execution of any given life plan. However, while these are the general characteristics of the psychopath, each individual of this type has a different method of reaction to his problems. While one goes into tantrums if frustrated, another has depressive spells, a third may project his difficulties and a fourth may try to "bluff" his way out. This reaction pattern is derived in the same manner as the varying reaction patterns of our so-called normal population and is probably the result of the interaction of the inherited characteristics and the influences of the environment. When a previously normal person is afflicted with an organic brain disease, we find in addition to the usual signs of the organic syndrome other symptoms which vary according to the previous personality. A psychopath when frustrated may experience a psychotic episode. The symptoms shown during these episodes also vary with the previous personality of the patient.

As illustrated in the above cases, the patients who had previously been prone to fits of excitement or depression showed accentuation of these characteristics during their psychosis and those who had always been markedly suspicious projected their difficulties. Those who had been impulsive and "epileptoid" had episodes of confusion and those who had been introverted and suffered tics became seclusive and manneristic. Although the etiological factor was similar in all of them, and the course and prognosis were equally similar, the form of the psychosis varied markedly with makeup of the individual.

Summary

1. Prison psychoses have a common etiology in the sense that they are a reaction to a common environment.

2. Fifty cases of prison psychoses were studied after recovery with respect to the relation of the previous personality to the symptoms shown during the psychotic episode. Where suitable, the Humm-Wadsworth Temperament Scale was administered.

3. In 46 of the cases, a definite relationship could be found between the psychotic symptoms and the previous personality as shown by the previous history or the temperament scale or both.

4. The form of prison psychosis is dependent upon the previous personality and constitution.

Dannemora State Hospital
Dannemora, N. Y.

REFERENCES

1. Ziegler, L.: Study of delirium. Am. J. Psychiat., 6:105, July, 1926.
2. Schilder, P.: Am. J. Psychiat., 13:366, September, 1933.
3. Curran, D., and Wolfe, H. G.: Delirium and allied states. Arch. Neur. Psychiat., 33:1175, June, 1935.
4. Singer, D.: Psychosis and the central autonomic nervous system. J. A. M. A., 110:2048, June 18, 1938.
5. Humm, D. G., and Wadsworth, G. W.: Humm-Wadsworth Temperament Scale Am. J. Psychiat., 92:163, July, 1935.
6. Karlan, S. C.: Recurrences of psychosis with psychopathic personality. PSYCHIAT. QUART., 12:94, January, 1937.

THE PSYCHIC ASPECTS OF BRONCHIAL ASTHMA

Review and Synthesis of the Literature

BY ROBERT B. SAMPLINER, M. D.

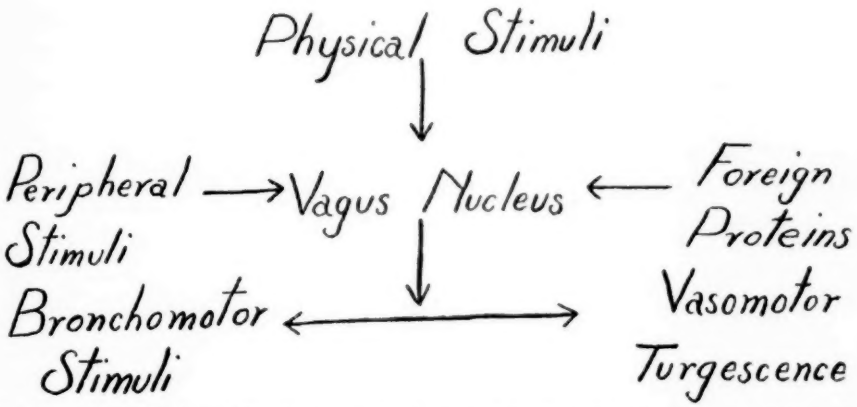
One of the most characteristic concepts of our modern civilization is the idea that everything in the present is true, and that everything from the past is a delightful, but useless, museum-piece. This concept finds some of its strongest adherents in the field of science. Thus, contemporary theories or facts are the only ones that have any significance; the speculations of past scholars are only to be scoffed at. There is nothing so outmoded as the scientific textbook of 20 years ago. This attitude is proper if we are to progress at all, but it makes for a great many pursuits of scientific will-o'-the-wisps which lead us into the bog of acceptance of a truth as Truth itself. Nowhere is this better seen than in the periodic fads which sweep over the practitioners of medicine. The exponents of these fads generally attempt to treat all diseases by their new touchstone. This tendency towards superficiality has often made us forget the patient for the disease. We have many specialists who are eminently capable of treating one disease, or one organ system, according to the dogmata of one school or another, but relatively few men who are interested in the patient as a whole. To many medical men the patient is a collection of cells, or organs, or a physiological system. His psychic background is not considered by them as a proper field for medical thought. The converse is sometimes, but less often, true of the psychiatrist who is apt to forget that the patient really has a body which may malfunction, and which may need his knowledge of medicinals in order to correct some deficiency. The doctrine of separation of the individual into psyche and soma has led us into so many grave errors that it is high time we abandon it for the more fruitful attitude that we are dealing primarily with human beings, not with diseases.

Today very few physicians would deny the allergic basis of asthma. But we are all so busy calling asthma an allergic disease that we have almost entirely neglected to question what is allergy and what is an allergic patient. What peculiarity makes some individuals sensitive to substances which are entirely harmless to the great majority of people? If we look into the outmoded textbooks

of the past, before we knew the term "allergy," some light may be shed which is unfiltered by the lens of our present knowledge and may show our familiar landscape in unaccustomed relief. In the works of Van Helmont[13] (1577-1644) asthma is called a "nervous disease." This viewpoint was upheld by Willis[14] and Floyer[6] (1698), both of whom suffered from the disease. Laennec,[9] who distinguished bronchial from cardiac asthma, reports a case of bronchial asthma which was invariably brought on by the dark and was relieved by lighting the room. Even today cases of "allergy" to heat and cold are reported by various authors. These cases could scarcely be attributed to the circulation of allergens in the blood. On the other hand, the literature abounds with cases which are caused by allergens and are cured by their removal. It is highly desirable that some common ground should be found between these undoubted allergic cases and those due to some cause other than allergy.

The quickest way to discover a connection between two diverging roads is to go to the fork. The fork here is obviously the mechanism of bronchial asthma of whatever cause. Asthma is a disease characterized by contraction of the muscles of the smaller bronchioles, and, perhaps, by secretion into these bronchioles. It is known that these muscles contract in response to stimulation of the parasympathetic portion of the autonomic nervous system. That this is the case is borne out by the striking relief which epinephrine—a stimulator of the sympathetic nervous system—affords to sufferers from an attack of bronchial asthma. W. Langdon-Brown[16] quotes Hurst[27] to the effect that the vagal nucleus may be stimulated by peripheral excitation such as pressure on the nasal septum, by foreign proteins circulating in the blood (the allergens), or by psychic stimuli. The following diagram, after Hurst, illustrates this relationship.

Jelliffe[28] speaks of the levels at which the vegetative nervous system may be affected as: (1) the "biochemical" or "physicochemical" (allergy), (2) the "peripheral reflex" or "sensorimotor" level (stimulation of the nasal septum, etc.) and (3) the "psychological" or "psychical" level. He further states that stimuli on one of these levels may so alter the threshold of the other levels that subliminal stimuli at those levels will produce a response.



Parasympathetic effects may be brought about, of course, either by stimulation of the parasympathetic, or by depression of the sympathetic. According to Jelliffe's concept, therefore, if a patient is allergic to some substance and has, in addition, a psychic disturbance he will react to far smaller amounts of the allergen in question than he would ordinarily. If his psychic difficulty can be resolved, he may have no more attacks of asthma although remaining sensitive to the allergen. A psycho-physico-chemical explanation of the mechanism of asthma is given by Laudenheimer[30] who treated his patients with exercise and hypnosis:

PSYCHIC+*Physical**	*Physical*+PSYCHIC
Reversible Action	
Of PSYCHE	and *Respiration*
I. AFFECT causes change of the *respiratory curve*, depth, and frequency (Zoneff and Meumann.)†	I. *Voluntary* acceleration of respiratory rhythm causes AFFECT (Wundt, Heyer).
II. PAIN or PSYCHIC EXCITEMENT lowers the CO_2-tension in the blood (Straub, Beekmann); the sensitivity of the respiratory center is increased, hence increased *ventilation.*	II. *Hyperventilation,* forced expiration (Heyer), increases CO_2-tension of alveolar air, and produces AFFECTIVE EXCITEMENT and with appropriate breathing technique in predisposed individuals) typical symptoms of asthma (Talma, Strubing).

*The physical starting links, viz., end links of the chain, are marked by *italics*, the psychic links by CAPITALS.

†In Dunbar, H. Flanders.

III. PSYCHIC STIMULI may, via vasovegetative centers, spontaneously or in hypnosis, lead to most serious spastic-exudative (pseudo - anaphylactic) symptoms and to typical *asthma.*	III. *Allergic* stimuli may, over the reverse pathway (body fluids, colloidal disequilibrium, hormonal influence, etc.) lead to anaphylactic shock, bronchospasm, exudation, asthma and ANXIETY.
IV. SLEEP, VIZ., TIREDNESS, increases CO_2-tension in blood (Straub), decreases the sensitivity of the respiratory center, hence produces slowing of *respiration.*	IV. Slowing of *respiration* (with relaxation of the respiratory muscles) through exercise or suggestion leads to tiredness, viz., sleep [and under HYPNOSIS to lasting lowered sensitivity of the respiratory center].

The secondary effect of allergens is proven by patients of Moos,[32] and of Wittkower and Petow[43] in whom were found, at the first visit, Curschmann's spirals, Charcot-Leyden crystals, and eosinophilia in the sputum, eosinophilia in the blood, and who had positive skin tests for various substances. When treated by psychotherapeutic methods they were cured of their asthma, the Curschmann's spirals, Charcot-Leyden crystals, and eosinophilia disappeared from the sputum, the blood eosinophils dropped to normal, but the skin tests remained positive. The patients could now, however, be exposed to these substances with impunity. Wittkower and Petow claim that asthma always has a psychic basis. This is often found only in the first attack, or it may be most evident at that time. The psychic factors may manifest themselves at first only in dyspnea. They state, in addition, that psychic factors cause supersensitivity, or raised excitability, to all stimuli. They state also that bronchial asthma is never caused by bodily overexertion *per se* but that, in addition, psychic factors are always present. These concepts are of great value in the understanding of the role of the psychic factors in bronchial asthma.

The psychic factors behind bronchial asthma may be of various sorts and may be expressed in many fashions. These factors may be:

(1) *A conditioned reflex which causes the reproduction of an*

asthmatic attack whenever the circumstances accompanying a previous attack are reproduced. The attacks which are brought on by the smelling of an artificial flower which the patient believes is real is a classical example of this type.

(2) *The expression of a mental conflict with the organ in which the conflict is expressed fortuitously or purposefully selected.* This selection often is found to be the lungs in a patient with a phthisiophobia, or it may be an organ which is "inferior," for example, weakened by a previous bronchitis. According to Sadger,[38] organic predisposition denotes a failure to have repressed or withdrawn the erogeneity which is possessed by all parts of the body primitively and which is normally finally concentrated only in special zones, or it may be due to a reacquirement of erogeneity by some special organ system. In bronchial asthma there is a special erogeneity of the respiratory tract from the nose to the bronchioles. The organ may, on the other hand, have acquired a significance in the psychoanalytical sense and be selected for its significance. There are cases on record in which the turgescence of the nose in asthma is identified by the patient with turgescence of the penis, hence an erection. (Such cases are reported by Oberndorf[33] and by Dunbar.[21]) A single female patient of 62 years recently seen by me who is now suffering from manic-depressive psychosis (a large incidence of asthma in patients with manic-depressive psychosis is stressed by many authors) states that her asthma started following the death of her mother, to whom she was very much attached. This death left her with the care of an aged father and a blind brother. She said that she had so much to do that she was always breathless and that this brought about her asthma. Although her physician at that time mentioned other causes she refuses to believe otherwise. Her own opinion of the cause of her disease shows how little below the surface the real factors must lie. She further stated that she first came to the hospital to escape these cares. It does not seem illogical to see superficial common factors in the etiology of her asthma and her depression—deeper in her personality the unresolved Oedipus situation plays its role.

(3) *The use of the disease by the asthmatic for the purpose of gaining his own conscious ends.* This teleological type of case oc-

curs very often in the literature, although Rogerson[35] regarded this type as very rare in his series of children. In a case which I have personally observed for a period of about twelve years, the patient, who is the younger of two sons, has invariably used his asthma as a means of obtaining his goal. He was always a sickly child, and finally, after an attack of bronchitis at the age of seven, a diagnosis of bronchial asthma was made. From the time when the initial diagnosis of asthma was made, the boy's every wish was indulged by his oversolicitous parents. I early observed that whenever the patient was thwarted, his reaction would be "Let me do this, or I'll get asthma," or "Don't touch me, or I'll have asthma," and to be sure he "got asthma." Some of the attacks were exceedingly severe, some very light. Change to a more equitable climate was without benefit as were repeated attempts to control the disease by elimination diets or by desensitization. The only time that he was ever free from asthmatic attacks over a prolonged period was when, at the age of nine years, he was sent to a boys' school. There he ate all kinds of food, came in contact with animals to which he was sensitive, but never had an attack during the two years that he spent at the school. Removal from the school was followed by a rapid resumption of the asthmatic attacks. When his parents finally came to the conclusion that he was an extremely spoiled and selfish child, and must be trained at all costs, his asthma became very much worse. But when he found that an asthmatic attack would no longer procure him immunity from punishment, or the things that he desired, his attacks began to occur much less frequently and were milder. The self-predictability of his attacks was the most striking feature of his disease. His attacks were always preceded by difficulty in breathing which seemed to be a matter of his will, although when an attack was well developed it was obvious that he could do nothing about it. Unfortunately for this patient, his attacks had persisted for so long before any enlightened approach to the problem was made, that he was left with a far advanced emphysema.

(4) *The result of suggestion or imitation.* Schultz[39] discusses the case of a suggestible boy who slept in the same room with his mother for a period of nine years, and witnessed her attacks. During the last eight of those years, he also had asthma. When the

boy was removed from his home, the asthma stopped, and has never recurred over a period of several years.

(5) *The result of psychic trauma.* This is quite understandable if it is considered how often our emotions are reflected in respiration. We "hold our breath from terror," and breathe rapidly from excitement. In a great many patients it has been found that the primary attack occurred in some especially significant emotional situation. Subsequent attacks recur when a similar emotion is experienced, either in actuality or in thought—hence the great number of attacks which develop during the night while the patient is dreaming. Dunbar quotes Fenichel,[24] who writes that sometimes the "conflicts which were once waged between the individual and reality are now carried on between the patient and his respiratory apparatus." This type of case is very closely allied to the anxiety state with hyperventilation syndrome; many of these patients hyperventilate just before the attack is precipitated. Gliebe* recently saw a patient in the University of California Clinic whose attacks started with cough and hyperpnea. Wheezing followed and then a true hyperventilation syndrome. The patient stated that she obtained relief by the use of her own will power. The attacks which lasted an average of 45 minutes came on with the excitement of getting her husband to work and her children to school in the morning. She was very greatly benefited by the use of ammonium chloride and breathing exercises.

Treatment of the psychically determined cases of bronchial asthma may be of many kinds. It may be directed either at the symptoms or at the individual himself. Symptomatic treatment consists in breathing exercises, but this is also a mode of suggestion since the patient believes that he will have no more asthma. Persuasion and waking suggestion have often been used with great success. The objection to these forms of treatment is that they leave the cause undetermined and, although they may relieve the asthma, the patient still has difficulties which must be expressed in some other fashion. Cases are reported in which the cure of the asthma was followed by new symptoms in other systems, or even flight into a psychosis. Still another method of treatment is post-hypnotic suggestion. The mode of action may be either the suggestion *per se,* or an alteration, which may be permanent, of the

*Gliebe, P. A.—Personal Communication.

sensitivity of the autonomic nervous system by the hypnosis. The objection to its use is that the patient may relinquish his symptoms but finds that he still needs some means of expression of his conflict and may either seek new symptoms or regress. A far better method is the use of hypnosis for investigation of the conflict—the so-called psychocatharsis. No objections can be raised against a well conducted investigation of this sort, the type of psychotherapy preferred being an individual question. Finally, the method of psychoanalysis can be used. This seems to be the most rational of all the methods: the patient is investigated, his conflict is brought into consciousness (or his difficulties are resolved if they do not amount to an actual psychic conflict) and he is advised to solve his conflict objectively. The admission of the presence of the conflict and its rationalization resolves the conflict. He then has no need for his symptoms and, therefore, relinquishes them.

The methods of psychotherapy in bronchial asthma are of no use to us, if they accomplish nothing. That, however, is not the case. The literature abounds with improvements and with actual cures which have been effected by psychotherapy alone, or by psychotherapy in connection with drug therapy. Pollnow, Petow and Wittkower[34] survey 45 published cases in which psychotherapy has been used: (The following table and its quoted analysis has not, to the author's knowledge, been available previously in English.)

TABLE 1.

From H. Pollnow, H. Petow and E. Wittkower*

	Author	Title	Number of cases	Case number
I.	Costa	Zur Lehre vom Asthma bronchiale. Dtsch. med. Wschr. 1922, 1347	1	1
II.	Forel	Der Hypnotismus. 7. Aufl. Stuttgart, 1918, S. 274	1	2
III.	Hahn	Psychische Infektion als Ursache nervöser scheinbar hereditärer Erscheinungen. Dtsch. med. Wschr. 1925, 949	1	3
IV.	Heyer (u. Bulger)	Möglichkeiten und Grenzen der Psychotherapie bei Organneurosen. Dtsch. Z. Nervenheilk. 98, 125 (1927)	4	4 5 6 7

*Author's translation.

V.	Hilger	Die Hypnose und die Suggestion. S. 164. Jena: 1909	2	8 9
VI.	Jacobi	Asthmabehandlung mit Hypnose. Dtsch. med. Wschr. 1926, 452	1	10
VII.	Kronfeld	Psychotherapie S. 218. Berlin: 1924	1	11
VIII.	Liepmann	Deutung und Heilung einer Zwangsneurose und einer hysterischen Neurose. Internat. Z. Psychoanal. 1927, 64	1	12
IX.	Löwenstein	Asthma und Psychotherapie. Med. Klin. 1926, 995	4	13 14 15 16
X.	Marcinowski	Die Heilung eines schweren Falles von asthma durch Psychoanalyse. J. f. psychoanalyt. u. psychopathol. Forschg. 5, 2, 529, (1913)	1	17
XI.	Marx	Psychogenität u. Psychotherapie d. Asthma bronchiale. Dtsch. med. Wschr. 1923, 477	2	18 19
XII.	Mohr	Psychophysische Behandlungsmethoden. S. 104. Leipsig: 1925	3	20 21 22
XIII.	Moos	Über den Wert der Behandlung der Psyche bei inneren Erkrankungen, ihre Methoden u. ihre Erfolge. Ther. Gegenw. 1921, 213	2	23 24
XIV.	Reichmann	Zur Psychopathologie des Asthma bronchiale. Med. Klin. 1922, 1091	1	25
XV.	Römer (u. Kleemann)	Das Asthma und seine Behandlung. Dtsch. Arch. klin. Med. 155, 307 (1927)	9	26 27 28 29 30 31 32 33 34
XVI.	Schultz	Die seelische Krankenbehandlung. S. 232, 288. Jena: 1922	2	35 36
	Schultz	Praktischer Arzt und Psychotherapie	4	37 38 39 40

XVII.	Stegmann	Zur Aetiologie des Asthmas bei Kindern. Med. Klin. 1908, 1113	2	41 42
XVIII.	Stekel	Nervöse Angstzustände und ihre Behandlung. 3. Aufl. S. 94, 101, 102. 1921	3	43 44 45

They analyze the data in the following fashion (numbers in parentheses refer to case numbers in table):

The material consists of 45 cases, which are published by 18 authors.

Thirty-seven cases have data about the length of the sickness before the beginning of the psychotherapy.

One case came for treatment in the first attack (10).

Two cases were ill for several months (9, 30).

In 5 cases the asthma had lasted 1 to 2 years (7, 26, 29, 42, 45), in 17 cases had lasted 3 to 10 years (1, 3, 5, 8, 12, 13, 17, 18, 19, 20, 21, 25, 27, 33, 35, 41, 43), in 8 cases 10 to 20 years (2, 15, 22, 23, 28, 31, 32, 40), and in 4 cases 30 to 35 years (4, 16, 34, 36).

In the history of 15 cases, bronchitis is expressly mentioned (4, 5, 11, 15, 17, 18, 19, 20, 22, 28, 30, 35, 36, 41, 42), in 8 cases of these it is an original bronchitis with the (subsequent) development of the asthma (4, 5, 17, 20, 22, 28, 30, 41).

Objective asthma findings are mentioned in 23 cases (1, 2, 4, 5, 10, 12, 15, 17, 20, 21, 22, 23, 24, 27, 28, 29, 31, 32, 33, 35, 36, 41, 42, 45).

In 9 cases asthma is found in the ascendency (3, 4, 13, 14, 22, 23, 25, 29, 31).

A constitutional psychopathy, or at least psychopathic features are mentioned in 23 cases (1, 3, 4, 6, 7, 10, 11, 15, 16, 20, 22, 23, 24, 26, 29, 30, 31, 33, 34, 35, 36, 39, 40).

An initial psychic conflict or an initial psychic trauma was found 12 times (4, 5, 10, 18, 24, 29, 30, 31, 32, 37, 38, 41).

The classification according to therapeutic procedure gives the following results:

Medical procedures are expressly mentioned in 22 cases (1, 4, 5, 7, 10, 13, 14, 17, 18, 21, 22, 23, 26, 28, 29, 31, 32, 33, 34, 36, 41, 45).

It is expressly mentioned that they were discontinued during psychotherapy in 10 cases (1, 4, 5, 7, 17, 18, 26, 28, 29, 45).

Nerve-point massage was used in 3 cases (4, 5, 7).

Breathing exercises (were employed) in 8 cases (1, 4, 5, 7, 10, 21, 22, 31).

Hypnosis was used in 20 cases (1, 2, 3, 8, 9, 10, 11, 14, 15, 16, 17, 18, 19, 27, 29, 31, 41, 42, 44, 45).

Among them 4 cases were found which were handled by psychocatharsis, and 5 cases in which single attacks were stopped hypnotically (1, 3, 27, 29), and (8, 17, 18, 27, 45).

Waking suggestion was used in 1 case (43).

Persuasion (was employed) 8 times (1, 7, 14, 16, 17, 18, 19, 39, 40).

Conflict analysis* was undertaken 18 times (1, 5, 11, 12, 13, 16, 21, 22, 24, 26, 27, 28, 30, 31, 32, 33, 34, 38).

Six times psychoanalysis was used (4, 6, 15, 17, 23, 30).

In 12 cases psychologic methods were employed (11, 16, 18, 25, 29, 35, 36, 37, 39, 41, 42, 43).

*Conflict analysis means psychoanalysis for only a few sessions without attempting to reach the basic factors, or which is aimed only at putting the conflict aside.

The psychotherapeutic results are presented in the following fashion:

I. From the viewpoint of healing:

The treatment was without result in 2 cases (15, 16).

Three cases were designated by the authors as improved (11, 23, 45).

Relapses after the "healing" were found in 15 cases (1, 3, 7, 12, 16, 19, 20, 26, 27, 28, 29, 30, 33, 36, 41).

"Healed" without relapse were 23 cases (2, 4, 5, 6, 9, 10, 13, 18, 21, 22, 24, 25, 31, 32, 34, 35, 37, 38, 39, 40, 42, 43, 44).

II. From the viewpoint of followup:

Twenty-seven cases contain special data about the followup (1 2, 3, 4, 5, 6, 9, 10, 12, 13, 18, 20, 21, 22, 24, 26, 27, 28, 29, 30, 31, 33, 34, 40, 41, 42, 44).

Seven cases were observed at least one year (1, 2, 3, 10, 24, 28, 42).

Fifteen cases were observed one year and longer (4, 5, 7, 9, 12, 13, 20, 21, 22, 26, 31, 33, 40, 41, 44).

Of these 5 cases were observed 3 years and longer (20, 21, 22, 33, 41).

And, again, of these, 2 cases 5 years and longer (22, 41).

Observed, without definite time data, but over a long time, were 5 cases (18, 27, 29, 30, 34).

From a perusal of this record, little doubt can be left of the effectiveness of psychotherapy in bronchial asthma (and in any of the states which are controlled by the autonomic nervous system).

Because asthma is a disease which leads, when allowed to run an unchecked course, to definite physical changes, it is important that it be successfully treated from its earliest stages. If allowed to continue under symptomatic treatment the patient will progress to outspoken emphysema, chronic bronchitis, or even status asthmaticus (which is apt to be fatal at any time), and then very little can be done for him. Because asthmatics usually receive the benefits of psychotherapy only after other means of treatment has failed, Gillespie[26] pleads that every asthmatic be given a psychic workup by a competent psychiatrist, in addition to his medical examination. It is only in this fashion that we can decide early enough to prevent organic complications which patients come under the classification of psychogenic asthma. As to methods of therapy I have little to say. The wisest and most logical therapeutic method would seem to be a comprehensive one, aimed at both allergic and psychic factors. Actual desensitization may be of value. The one paramount consideration is that the patient is a personal-

ity and personalized treatment will be best for him. If this concept be embraced, the actual mode of treatment can be left to the clinical acumen of the physician.

Utica State Hospital
Utica, N. Y.

REFERENCES

Historical

1. Berkart, J. B.: On Asthma—Its Pathology and Treatment. Churchill, London, 1878.
2. Bree, R.: Practical Inquiry Into Disordered Respiration, Distinguishing Convulsive Asthma. Humphries, Philadelphia, 1811.
3. Coke, F.: Asthma. Wood, New York, 1923.
4. Dobell, H.: Winter Cough, Catarrh, Bronchitis, Emphysema and Asthma. Lindsay, Philadelphia, 1872.
5. ——: Asthma, Its Nature and Treatment. Smith, London, 1886.
6. Floyer: Quoted in Wittkower, E., and Petow, H.: Beiträge zur Klinik des Asthma bronchiale und verwandter Zustände IV Zur Psychotherapie des Asthma bronchiale. Zeitschr. f. Klin. Med., 110:701, 1929.
7. Hayes, T.: Observations on Hooping Cough and Asthma. Murray, London, 1786.
8. Kahn, M. H.: Historical survey of our knowledge of bronchial asthma. Medical Life, 35:109, March, 1928.
9. Laennec: Quoted in Wittkower, E., and Petow, H.: Beiträge zur Klinik des Asthma bronchiale und verwandter Zustände IV Zur Psychotherapie des Asthma bronchiale. Zeitschr. f. Klin. Med., 110:701, 1929.
10. Osler, William: Modern Medicine. Lea and Febiger, Philadelphia and New York, 1925-1927, third edition.
11. Salter, H. H.: On Asthma—Its Pathology and Treatment. Blenchard, Philadelphia, 1864.
12. Stolkind: History of bronchial asthma and allergy. Proc. Roy. Soc. Med., 26:1120, 1933.
13. Van Helmont: Quoted in Wittkower, E., and Petow, H.: Beiträge zur Klinik des Asthma bronchiale and verwandter Zustände IV Zur Psychotherapie des Asthma bronchiale. Zeitschr. f. Klin. Med., 110:701, 1929.
14. Willis: Quoted in Wittkower, E., and Petow, H.: Beiträge zur Klinik des Asthma bronchiale und verwandter Zustände IV Zur Psychotherapie des Asthma bronchiale. Zeitschr. f. Klin. Med., 110:701, 1929.

General

15. Brauns, W.: Zur Behandlung der allergischen Erkrankungen, insbesondere des Heufiebers. Med. Welt, 7:559, April 22, 1933.
16. Brown, W. Langdon: Proc. Roy. Soc. Med., Pt. 16:3, p. 1, 1923.
17. ——: Physiological Principles in Treatment. William Wood and Co., New York, 1930.
18. Costa, N.: Zur Lehre von Asthma bronchiale. Deutsche Med. Wchnschr., 48:1374, 1922.
19. Duke, W. W.: J. Lab. and Clin. Med., 13:20, 1927.
20. Dunbar, H. F.: Emotions and Bodily Changes. Columbia University Press, New York, 1938, second edition.
21. ——: Psychoanalytic notes relating to syndromes of asthma and hay fever. Psychoan. Quart., 7:25, January, 1938.
22. Engelen, P.: Psychosomatische Asthmabehandlung. Deutsche Med. Wchnschr., 58:1508, September 29, 1935.
23. Feinberg, S. M.: Asthma, Hay Fever and Related Disorders. Lea and Febiger, Philadelphia, 1933.

24. Fenichel, O.: Quoted by Dunbar: Psychoanalytic notes relating to syndromes of asthma and hay fever. Phychoan. Quart., 7:25, January, 1938.

25. Feinberg, S. M.: Allergy in General Practice. Lea and Febiger, Philadelphia.

26. Gillespie, R. D.: Psychological factors in asthma. Brit. M. J., 1:1285, June 27, 1936.

27. Hurst, A. F.: Quoted by Brown, W. L.: Proc. Roy. Soc. Med., Pt. 16:3, p. 1, 1923.

28. Jelliffe and White: Diseases of Nervous System. Lea and Febiger, Philadelphia, 1915-1935.

29. Kholey, M. K. El.: The mental factor in bronchial asthma. Lancet, 217:767, 1929.

30. Laudenheimer, R.: Hypnotische Uebungstherapie des Bronchialasthmas. Therap. d. Gegenw, 67:339, 1926.

31. Löwenstein, J.: Asthma und Psychotherapie. Med. Klin., 22:994, 1926.

32. Moos, E.: Zur Behandlung des Asthma bronchiale. Münch Med. Wchnschr., 75:1841, October 26, 1928.

33. Oberndorf, C. P.: Psychogenic Factors in Asthma. New York State J. Med., 35:41, January 15, 1935.

34. Pollnow, H., Petow, H., and Wittkower, E.: Beiträge zur Klinik des Asthma bronchiale und verwandter Zustände IV Zur Psychotherapie des Asthma bronchiale. Zeitschr. f. Klin. Med., 110:701, 1929.

35. Rogerson, C. H.: Role of psychotherapy in treatment of asthma—eczema—prurigo complex in children. Brit. J. Dermat., 46:368, August-September, 1934.

36. ——: The psychological factors in asthma—prurigo. Quart. J. Med., 6:367, October, 1937.

37. Römer, C., and Kleeman, A.: Das Asthma and seine Behandlung. Deutsche Archiv. f. Klin. Med., 155:307, 1927.

38. Sadger, J.: "Ist das Asthma bronchiale eine Sexualneurose?" Zentralbl. f. Psychoanalyse, 1:200, 1911.

39. Schultz, J. H.: Asthma als Psychotherapeutisches Problem. Zentralbl. f. Innere Med., 50: 344, April 13, 1929.

40. Stegmann, A.: Zur Aetiologie des Asthmas bei Kindern. Med. Klin., 4:1113, 1908.

41. Strauss, E. B.: Psychogenic Asthma. A record of two cases. Lancet, 1:962, 1927.

42. ——: The Psychogenic Factor in Asthma: 1. A problem in methodology. Guy's Hosp. Rep., LXXXV:309, 1935.

43. Wittkower, E., and Petow, N.: Beiträge zur Klinik des Asthma bronchiale und verwandter Zustände V. Zur Psychogenese des Asthma bronchiale. Zeitschr. f. Klin. Med., 119:293, 1932.

44. Wulff, M.: Zur Psychogenität des Asthma bronchiale. Zentralbl. f. Psychoanalyse, 3:202, 1913.

45. Ziegler, L. H., and Elliott, D. C.: The effect of emotion on certain cases of asthma. Am. J. Med. Sci., 172:860, December, 1926.

DISTURBANCES IN THE RETICULO-ENDOTHELIAL SYSTEM DURING THE COURSE OF METRAZOL TREATMENT

Report of Three Cases

BY LOUIS WENDER, M. D.,* AND M. D. EPSTEIN, M. D.*

In a recent article von Meduna and Friedman[1] have given a full and comprehensive survey of the complications which have been observed to occur during the course of metrazol therapy. In our work with this drug on a variety of mental disturbances, we have encountered a complication not previously reported.

This complication consists of an involvement of the reticuloendothelial system, the clinical manifestations of which are a lymphadenopathy and a disturbance in the blood picture. Various changes in the blood picture have been studied by other workers who made certain interesting observations. Von Meduna[2] reported certain transitory changes in the blood picture following the injection of metrazol. These consisted of an increase of 13 to 15 per cent in the relative number of neutrophilic leucocytes, with a proportional reduction in the number of lymphocytes. He also suggested that the occurrence of these changes from the normal differential count might possess a certain, though limited, prognostic value, since it was observed that this change was greatest in patients who showed a remission. Sorger and Hofmann[3] gave a more detailed report of the usual findings during an uncomplicated course of treatment. They studied blood smears taken from patients before treatment was instituted and at hourly intervals up to six hours after injection of the drug. They observed that during the attack and immediately afterward the eosinophiles, monocytes, and polymorphonuclear leucocytes were decreased in number, while the lymphocytes showed an increase. A shift to the left occurred about an hour after the seizure, reaching its height in two to three hours, at which time there were no eosinophiles seen. There was a decrease in monocytes and lymphocytes and an increase in neutrophilic leucocytes. This persisted for about four hours; thereafter the blood picture returned to normal six hours after the injection. It should be noted that these changes were also transitory in nature.

*Hastings Hillside Hospital, Hastings-on-Hudson, N. Y.

Of a series of 53 patients who have received treatment at this hospital, three have developed a syndrome during the course of treatment. The findings in these three instances seem sufficiently clear to warrant their being grouped together and drawn to the attention of those using the drug.

These patients complained primarily of painful glandular swellings, while blood studies performed during this period of lymphatic disturbance revealed changes in the blood picture which were totally different from those which may be considered the usual occurrence, and which were felt to be definitely pathological. The changes were rather long in duration and it was felt that had the treatment been continued the possibility of producing permanent pathological changes, with perhaps more serious effects, was very great. Epstein[4] has brought a case to our attention in which the patient developed a typical agranulocytic angina during the course of treatment, the illness progressing to a fatal termination. There was sufficient similarity in the pictures we observed and in that of the case just mentioned to warrant the suspicion that had the drug been continued, the imminent danger of a similar termination was present.

Case Reports

Case 1. C. P., a 37-year-old married female, was admitted to this hospital on September 7, 1938, in a fairly typical psychoneurotic depression, with various conversion symptoms, paraesthesiae and neurotic hunger. Metrazol treatments were instituted on October 18, 1938, and continued at regular intervals until November 5, at which time the patient received her ninth treatment, the dose being 8.0 c.c. At this time the patient developed a series of epistaxes and some degree of hypertension not previously present. The treatments were temporarily discontinued and 10 days later the patient complained of pain on the left side of the neck. Examination revealed a small, movable, tender gland, about the size of a pea, lying on the anterior border of the left trapezius. By November 21 the gland was greatly enlarged, the skin over it was red and there was fairly acute tenderness. There was also a tender, uniform enlargement of the axillary lymph nodes bilaterally. The spleen and liver were not palpably enlarged. No other glandular enlargement was observed, and the fundi were negative.

Blood examination showed a red cell count of 4,300,000, hemoglobin 90 per cent, color index 1.05. The white blood count was 8,800, the differential count showing 49 per cent neutrophiles, 2 per cent eosinophiles, 48 per cent lymphocytes, and one monocyte. Among the lymphocytes, however, there were many abnormal forms with lobulated nuclei, of the Rieder type. Two days later the white blood count was unchanged but the red cells showed an anisocytosis and poikilocytosis. On the first of December the differential count showed 60 per cent neutrophiles, 5 per cent eosinophiles, and 35 per cent lymphocytes, with many Rieder cells among the lymphocytes, in addition to which several degenerative forms were seen.

By this time the gland in the neck had disappeared, but the enlarged axillary glands were still present. The patient's temperature was watched consistently over a period of several weeks, but no rise was ever observed. Treatment had been discontinued, the patient's blood pressure returned to normal within a few days, although an occasional epistaxis still occurred. By December 14, about six weeks after the symptoms were observed, the glandular and blood changes had subsided.

Case 2. M. C., a 28-year-old unmarried female, was admitted to this hospital on June 21, 1938, with severe compulsive-obsessive neurosis. Metrazol therapy was instituted on June 23 and continued at fairly regular intervals until October 15, 1938. No unusual changes were observed during treatments, which numbered 30, but several weeks after the last treatment was given, the patient noticed a large tender swelling in the neck under the point of the chin. Examination revealed a large, tender lymphatic gland about the size of a lima bean. No other glands were enlarged. Temperature was normal and the spleen and liver were not palpably enlarged. The white blood count was 8,600 with a differential count of 55 per cent neutrophiles, 3 per cent eosinophiles, 41 per cent lymphocytes, and one monocyte. Among the lymphocytes there were many cells of the Rieder type with typical lobulated nuclei. The red blood count was normal.

Case 3. C. S., a 23-year-old unmarried female, was admitted on April 30, 1938, with a chronic, rather severe anxiety state. Metra-

zol treatments were instituted on May 7, 1938. Early in August, 1938, while still under treatment, the patient began to complain of tenderness of the glands in various locations of the body. Examination revealed hardening and tenderness with only slight enlargement of both right and left submandibular glands, the left axillary group, right and left femoral groups, with isolated glands also in the right axilla and the right inguinal regions. Liver and spleen were not palpable and the patient was afebrile. Laboratory examination showed a red blood count of 4,020,000, hemoglobin 92 per cent, color index 1.15. The white blood count was 5,250 with a differential of 56 per cent neutrophiles, 39 per cent lymphocytes and 5 per cent monocytes. Lymphocytes showed immature forms. This patient gave a history of having had a somewhat similar episode earlier in her life, at which time a diagnosis of glandular fever was made. The clinical picture observed in this hospital was not that of glandular fever, the actual diagnosis being in doubt.

Discussion

It is obvious that the syndrome which we observed does not fit very well into any of the familiar types of blood dyscrasias. Certain features were suggestive of infectious mononucleosis, and at one time it was suspected that we might possibly be dealing with an early agranulocytic angina. However, neither of these diagnoses could be maintained because of the extremely atypical nature of the findings. The disease which this picture most closely simulates appears to be aleukemic lymphatic leukemia, in which one sees a very similar enlargement of the glands, absence of fever and a white and differential count which usually conforms with the percentages observed in these three cases. In addition, the atypical lymphocytes of the Rieder type are frequently seen in aleukemic leukemia.

Summary and Conclusion

We are reporting three cases in which, during the course of metrazol treatment, there developed pathological disturbances in the reticulo-endothelial system, characterized by lymphatic enlargement and disturbances in the normal white blood cell relationships, in the absence of fever.

There is sufficient evidence to indicate that there is some element in the drug which produces changes in the blood picture. Usually these changes are of a transitory nature and appear, in the presence of a stable hematopoietic system, to return to normal within four to six hours after the administration of the drug. It is quite conceivable, however, that in individuals who lack this stability, very unfavorable reactions with unusual complications may occur, as reported here. The situation is possibly analogous to the occurrence of agranulocytic angina in predisposed individuals who have taken Pyramidon alone, or in combination with barbituric acid derivatives.

It is therefore suggested that during the course of metrazol therapy blood smears be examined at regular intervals, at the latest 24 hours after treatment, in order to determine the presence or absence of any pathological blood changes. The presence of any abnormal cells in the blood stream should constitute a contraindication to the continued use of the drug, even prior to the overt glandular enlargement, since this treatment is frequently given to mute or grossly psychotic patients who may not offer any specific subjective complaints, so that the irritant may not be removed until serious and possibly irreversible changes have occurred. Early recognition of any possible disturbances may prevent a fatal termination, since it appears that if metrazol treatment is discontinued soon enough, the pathological process recedes and the blood picture returns to normal.

REFERENCES

1. Von Meduna, L., and Friedman, E.: J. A. M. A., Vol. 112, No. 6, p. 501.
2. Von Meduna, L.: Convulsive therapy of schizophrenia. Psych.-Neurol., Wchnschr., 37:317, July, 1935.
3. Sorger, E., and Hofmann, E.: Convulsant therapy of schizophrenia. Psych.-Neurol. Wchnschr. 39:462-465, 473-478, 1937.
4. Epstein, Joseph: Personal Communication.*

*See pages 419-428, this issue.

A BEHAVIOR PROBLEM---RUNAWAYS*

BY BEN H. BALSER, M. D.

A preliminary report of the material seen in the Psychiatric Clinic of the New York Travelers Aid Society, recently published,[1] covered 50 cases, which were presented in an effort to delineate and to clarify the runaway problems encountered by this organization. This number has been increased so that at present** 300 such cases have come under the care of the clinic. With this larger group, a better evaluation of the need for such a resource, and the services it can render, is possible. The wealth of material available in the New York Travelers Aid Society alone, is demonstrated in the statistical report of that organization for 1937. Of the 300 cases studied, 214 were drawn from the 1937 group and consisted of those with whom the society had had long enough contact for treatment to be effective. Actually, 622 were cases handled by the society in that year. It is intended in this presentation to indicate what measures have been taken, from a psychiatric and social case work standpoint, in dealing with these problems at their peak. The need for awareness of the runaway question will thereby be more emphatically recognized. No evaluation of the results obtained is intended at this time.

The variety of the psychiatric material seen is outlined in the statistical table below (Table 1). Eighty-nine, or 30 per cent of the 300 cases, fall within the classification "behavior problem, runaways." Psychiatric literature on the subject indicates that there has been little attention paid to this pattern. One sees recognition of the problem in Kanner's[2] and in Pierson's[3] textbooks of psychiatry, but the case material is limited. Hartwell's study[4] of 55 cases is thorough, but here again the number is limited. Most of the patients seen in the Travelers Aid Psychiatric Clinic indicated the need for treatment by their action in running away and were in a large measure amenable to therapy. After all, when faced with a problem the individual has only two alternatives. He might face it and attempt to work out a solution, or run away from it. The number of individuals to be found in the latter category is legion.

*From the Psychiatric Clinic of the New York Travelers Aid Society.

**Up to April, 1938.

TABLE 1. STATISTICAL GROUPING

Behavior problem, runaway		89
Schizophrenia		59
a. Paranoid	38	
b. Catatonic	2	
c. Hebephrenic	11	
d. Simple	8	
Mental deficiency		35
Psychopathic personality		30
Manic-depressive psychosis		24
a. Manic	7	
b. Depressed	13	
c. Mixed	4	
General organic disease without psychosis		20
Normals		19
Undiagnosed psychosis		16
General paresis and juvenile paresis		8
Psychoneurosis		8
Involutional melancholia		5
Senile psychosis		4
Psychosis with cerebral arteriosclerosis		3
Psychosis with organic disease		3
Psychosis with mental deficiency		3
Idiopathic epilepsy		2
Unclassified psychoses (Folie a deux)		2
Psychosis with psychopathic personality		1
Fugue states		1
Chronic alcoholism		1
*Total		333

*The total number of diagnoses is greater than 300 because of double classification in some instances; for example, "mental deficiency" and "behavior problem, runaway." Of the 300, 69 were institutionalized in mental hospitals.

It is obvious that all runaway problems do not require extensive psychological investigation and treatment. Many of the individuals who are making their initial runaway will find the problem solved during, and by, this episode. However, many of the situations are much more severe and cannot be cleared up so readily. Proof of this statement is easily seen in the cases of repeated runaways, many of whom have become involved in criminal actions and who are thus known to the courts. There is an intermediate group which includes most of the cases herein recorded. These individuals come in with superficial reasons for having run away. It becomes the job of the psychiatrist and the social worker to learn the

true causes and the precipitating factors and attempt to ameliorate the situation. Above all else, shutting one's eyes to the problem and saying that one's only duty is the return of the individual to his or her home is a gross injustice to the patient who has presented himself for help. One can hardly expect youngsters to come into a social agency or clinic and say, "I have run away from home because I have certain psychological problems in the family situation with which I have been unable to cope."

In analyzing the cases within this group, emphasis must be placed upon the fact that it is only 18 months since treatment was first instituted with these patients and therefore no attempt can be made to evaluate accurately the results of such treatment. One can see a temporary type of adjustment which is being made in many instances, and it is hoped that this will become permanent. A followup study, made five to ten years hence, would be very valuable.

A rather important aspect of this problem is the age distribution of the patients (Table 2). Seventy-four of the 89, or 83 per cent, were 21 years of age or under. There is a peak of 15 patients who were 17 years old. Otherwise one finds a decreased incidence at higher and lower age levels.

TABLE 2. AGE DISTRIBUTION

Under 12		0
13	1	
14	1	
15	11	74
16	11	or 83 per cent,
17	15	21 years of
18	11	age or under
19	12	
20	8	
21	4	
22		4
23		3
24		1
25		3
26		1
27		1
34		1
41		1
Total		89

Causes for Runaway

In reviewing the "behavior problem, runaway" group it was found that all the cases could be included in seven categories. These are arbitrarily chosen groupings made with the intention of simplifying the numerous specific causes. The groups will be outlined in the order of their frequency. Case material will be presented to exemplify some of the problems in each group.

I. *Familial or emotional problems in the home*

There were 26 cases in this group. In those where the familial factor was important in precipitating the runaway situation, it was found that the case histories were not far afield from those of the notorious Jukes family. Since our histories follow this classical study quite closely, it is unnecessary to outline any of them. There was much in the material that the patients presented, to indicate that we might have been dealing with psychopathic personalities rather than with primary behavior problems of the runaway type. However, at the time these patients were seen in the clinic there was insufficient evidence to include any of them in the former category.

Som of the emotional problems in the home were of a fairly superficial nature, although psychological concomitants may have been rather deep-seated. An example of such a case follows:

Case 1. E. K. was a 16-year-old, American-born girl of Polish parentage. She ran away from home because her brother and mother had beaten her for playing truant from high school. She had been forced to attend school by her brother. The father was employed in a smelting and refining company; the mother undertook to manage the home and the 11 children. The oldest brother worked with the father but was quite unhappy in his occupation. He had worked previously as a waiter in New York and had been called home to help in taking up the burden and care of the family. He assumed responsibility for the patient and insisted that she go to school and not to work. The patient complained that he beat her and bossed the entire family. When she was ready to run away she was helped by her sisters, one a year older, the other four years younger.

The patient's developmental history is normal. She attended parochial school until the eighth grade. She was quite happy there, was especially fond of the Sisters, and had many friends. Two months before her runaway she entered high school. She developed an intense dislike for the school

and for her teachers. She had no friends there. She wanted to leave school, as all the other children in the family had, after reaching the eighth grade, but her brother forced her to go on. She ran away to New York, hoping to find a job so that she might support herself and send money home to her mother.

The worker wired the mother to tell her of the patient's whereabouts after E. K. had indicated that she would like such notification sent. She was seen in the clinic on the same day that her mother called to take her home. She was an attractive, rather slovenly dressed girl, who kept her head and eyes averted during most of the interview. Her intelligence was low normal. She spoke with considerable reserve but apparently recounted her tale in full at that time. She indicated that she would like to return home and work in the home setting, contributing her earnings to the support of the family. The mother of the patient was obviously worried about her. She was quite amenable to the suggestion that the patient be permitted to leave school and go to work.

Comment: The emotional problem resulting from the loss of her friends and school teachers in the change from parochial to public school was a more important factor in precipitating the runaway than was her retarded intelligence, since she should have been able to carry on first year high school work. One might have anticipated under ordinary circumstances the patient's returning to her home and discussing her school problem with her parents. In this case the inordinate fear of the brother prevented the patient from taking such a normal step toward the solution of her problem. In all probability there were other psychological factors but she did not remain long enough to permit investigation of them.

In five of the 26 cases in this group it was found that assaultive parents were responsible for precipitating the runaways. It was a matter of repeated aggressive behavior on the part of one or both parents, who were alcoholic in three instances and psychopathological in two instances.

Case 2. C. G. was a 16-year-old girl, who had run away from her home in Chicago a month previous to coming to New York. In the interim she had stayed with a married sister in Indiana. She was unwilling to return to her family in Chicago because her father drank heavily and on one occasion assaulted her with a knife. There was a definite question as to the father's "sanity." He tried to commit suicide on one occasion, and although he was taken into court for mental examination, was discharged by the judge. This information was verified. The patient, when seen in the clinic, was apparently frank and dependable in most of the information she

gave. Except for the fact that the patient's intelligence was borderline (I. Q. 76) she showed no abnormalities in her mental status. With her consent she was returned to Chicago and through the Travelers Aid Society there, plans were made to have the father receive psychiatric examination and treatment and to give the family whatever assistance was necessary for their readjustment.

Also included under this main group were cases of illegitimate pregnancy, incest, and in one instance, an illegitimate girl. There were 21 cases of illegitimate pregnancies seen at the Travelers Aid Society in 1937, but only four of these were seen in the clinic. In some instances, economic factors kept the two involved individuals from marrying; in others promiscuity on the part of the patient was responsible; in such cases seen at the clinic, psychotherapy was directed at relieving the anxiety which the patients presented in relation to their situation. It was possible to arrange for hospitalization of the individual in each case and to plan for the child in accordance with the wishes of the patient.

There were two cases of incest in which girls of 18 and 19, who had been having incestuous relationships with their fathers, had run away from home because of fear of detection. One came to New York from California and in the treatment of that situation the local Travelers Aid Society tried to place the patient in a girls' club upon her return and to help her to find work so that she might be self-sustaining. This plan had been developed before the patient left the psychiatric clinic and was based upon the requests and suggestions of the patient. However, upon her return home, she refused the assistance of the Travelers Aid Society and the plan could not be put into effect. In the other case, the patient had eloped from her home in New York and had been returned through the Travelers Aid Society. Here, too, the patient suggested a plan which we attempted to help her carry through. She was placed with relatives and permitted to finish her high school work. In this latter instance psychotherapy was refused by both the patient and the family, but they were willing to accept the help of the worker, through whom the adjustment was made.

Two patients, a boy of 17 and a girl of 18, ran away from a midwestern city to New York because of parental disapproval of their plans to marry. They were unmarried at the time they were seen

in the clinic. The Travelers Aid Society in the home city was asked to interview the parents of both patients and they were prepared for the return of the runaways. The families agreed to a plan, developed on the suggestion of the patients, whereby the boy was to finish his schooling, then go to work. After he had obtained a position the families were to permit the marriage. The patients returned home.

One illegitimate girl of 22 was seen in the clinic. She had known for many years that she was an illegitimate child. She had lived in a small town in Massachusetts with some friends, where she had been well liked by everyone with whom she came in contact. She was quite happy in the home which had accepted her. She had a boy friend with whom she had been keeping company but whose parents frowned upon the match. They circulated information relative to the patient's illegitimacy and she ran away from her foster home. She remained in New York for a short time attempting to make a new adjustment and learn the trade of hairdresser. She maintained a correspondence with her boy friend, who finally was able to persuade his parents to accept the girl, and she returned to marry him. At the time of this writing they have been married nine months and apparently are quite happy. The function of the clinic in this instance was to relieve the anxiety of the patient with respect to her illegitimacy and help her to try to make a new adjustment in New York.

II. *Children from broken homes*

There were 19 patients in this group. Many of them were orphans or children of divorced or separated parents, with or without step-parents. These cases are separated from the preceding ones which are included under the heading "Emotional problems in the home." As frequently happens in a broken home, an emotional problem will be created. However, the large number of cases of children running away from this type of home situation, in which the lack or substitution of a parent is the primary cause for the difficulty, warrants a separate grouping. Two cases in this group will be reported to indicate the type of situation encountered.

Case 3. N. P. was an 18-year-old girl of Protestant, American-born parents. She was the younger of two siblings, having a brother of 22. Her parents were born and brought up in Pennsylvania. After their marriage they moved frequently because of Mr. P.'s trade as carpenter. The patient was born in Baltimore, Md., and during the following five years the family was constantly on the move. Then the father secured permanent work and the family moved to northern New Jersey. The patient lived in the vicinity of Newark for the next 12 years. There was constant quarrelling between the parents and finally, in 1932, when the patient was 13 years old, they separated, the father contributing money for the support of his wife and children. They maintained separate residences since that time. There had been considerable agency contact before the patient came to us, but neither parent proved amenable to treatment. The mother was thought to be psychotic. She was difficult to get along with and accused the male neighbors of making advances toward her and the father of making advances to the patient. The brother left school when he was quite young and had been working for some time in a candy store in the neighborhood.

Our patient's past physical history was negative with the exception of a convergent strabismus of the left eye. She had worn corrective glasses for this condition since she was 7 years of age. She entered school at 6 and was graduated into high school at 14, remaining there until she was 16, at the beginning of her third year. At that time she ran away from her mother's home to her father's people in Pennsylvania because of general maladjustment and unhappiness at home. The mother located her and brought her back, at which time the father intervened and had her placed in a detention home. She was seen by the psychiatrist associated with the juvenile court and he recommended that the patient be placed in a home for mental defectives, but this was not done, although psychometric examinations which the psychiatrist did at that time gave her a mental age of 10, while her chronological age was 16. Instead, she was sent to the Parental Home (a detention home) for three months and then released to her mother. For the next two years her adjustment continued to be poor. This period was punctuated by her running away on three separate occasions, at which times she obtained work as nursemaid and as clerk in a five and ten-cent store.

The patient had just run away again from her mother's home when she came to us. She wanted to get a nursemaid's job and start afresh. She did not want her parents to know her whereabouts for she feared that they might send her to an institution. She remained in the Travelers Aid Guest House for 10 days, during which time she was seen in the clinic and a diagnosis of behavior problem, runaway and mental deficiency, low nor-

mal intelligence was made. Psychometric examinations were repeated and her I. Q. evaluated at 92. It was felt that the best disposition would be to return the patient to the care of the agency which had earlier contact and which could give long-term supervision. This plan was made jointly by the patient and the physician.

Comment: This case exemplifies one type of problem which appears amenable to treatment. It is difficult to say whether or not the quarreling in the home without a separation of the parents would have precipitated running away on the part of the patient. Placing the patient in a detention home when she was 15 to 16 years of age was unfortunate for the child. Another interesting factor which arose was the fact that this patient might have been institutionalized in a hospital for mental defectives on the basis of an earlier psychometric examination. Her difficulty arose as a result of her running away. Her contacts with the police were based upon this action rather than on any antisocial activity on her part. In spite of this, she was placed in a detention home. The family pattern of constant moving from place to place during the patient's infancy and early childhood may have contributed to the pattern of running away which she later adopted. The patient's need for a home and parents is an obvious and serious one and it is hoped that in some measure she is getting this in her present place of employment, which was found by the social agency interested in her.

Case 4. B. K. was an 18-year-old, American-born girl of American Protestant parentage. She had one sibling, a sister, who was two years older. This patient's father was an Italian who was abusive to his wife and children. The home situation became so untenable that the mother divorced the father when the patient was 4 years old and remarried two years later, when the patient was 6. They lived in Connecticut up to November, 1937, when they moved to Washington. The patient had no serious illnesses at any time, but there is a history of nail picking (not biting) and enuresis since childhood. She attended a commercial high school. According to the parents and the patient herself, she was always inclined to be rather lazy and refused to do housework. She denied more than occasional lying and any delinquent behavior, with the exception of having taken some money from her sister's purse on one occasion. She was fairly well adjusted as long as the family had lived in Connecticut, but with moving to the new city she had difficulty in forming a new set of friends and acquaintances. She became interested in "swing" music, started to stay out late at night, and failed to come home for her supper. About six weeks before coming to the New York Travelers Aid Society she ran away to Pittsburgh. At her request the family was notified and after she had been there a few days she was returned to Washington by the local Travelers Aid Society. How-

ever, it was not long before she ran away again, this time to New York, where she was referred to the New York Travelers Aid Society.

When she was seen in the clinic she presented a rather pleasant appearance. She was a well developed and nourished girl, who was neat and clean about her person. Physically, she was quite attractive. During the interview she constantly picked at her nails and for the most part kept her eyes fixed upon the floor or directed toward the window. She was of superior intelligence, her I. Q. being given as 128. In the main she was reticent about speaking of her difficulties and, although this patient was seen in the clinic a total of 11 times, there was never a close enough rapport established so that the patient could really bring herself to discuss her basic problems. Toward the end of her stay in New York City she appeared ready to speak more freely but as will be indicated this could not be taken advantage of.

Her parents came to New York to see the patient and the physician. They were rather frank in their discussion of the problem and apparently willing to cooperate. However, they had no insight into the situation. The stepfather felt that what was needed in this instance was an iron hand and the mother was totally subjugated to his will. They were advised to allow the patient to remain for the present in New York, especially since she did not want to go back with them. They agreed to do so and also to discuss their situation with the Washington Travelers Aid Society in anticipation of the patient's return. That organization undertook to treat both parents and gave them an understanding of what might be expected when the patient returned to them. At the end of four weeks the parents came to New York and she was willing to return to Washington with them. At present she is living at home and attending high school along with her sister. It was quite apparent when the parents were seen in the clinic on this latter visit that their attitude had changed considerably and that with understanding of the problems presented they might in a large measure be able to help her adjust in her home environment. The family had moved to a small model community and the patient became interested in many of the social activities associated with school and church.

Comment: Because of the tendency in communities to relieve themselves of transients; because of the lack of relief funds for their care; because of the inadequate relief program for transients in public and private fields, cases which do not present immediate possibility of adjustment in a new community are usually returned home without realizing that much more permanency from treatment can be expected if the milieu to which the patient is to be returned is altered and prepared for the return. If, in addition, the patient can be prepared for that return, it is apparent that more ideal treatment will be given. In this situation the patient was treated in

the clinic and the family were treated in their home city by the local Travelers Aid Society. This case is presented to illustrate the approach rather than the results, since it is appreciated that the time interval since her return home and the reporting of the case does not allow for any deductions as to the results of the treatment.

III. *Young wives and mothers*

It is rather interesting that so large a number of runaway cases were newly married wives and mothers, some with their children and some without. There were 13 patients in this group. Some individuals gave a history of repeated instances of running away; in fact, in one case, the mother had run away with her children on eight different occasions. The two cases outlined illustrate varying extremes presented in this situation.

Case 5. I. B. was a 25-year-old girl, who had been married three months prior to coming to the New York Travelers Aid Society. She was born in Halifax, N. S., and gave a history of having been educated in convents there up to the age of 19. She came to New York at the age of 22, following financial reverses at home, and worked as a photographer's model from that time on. She met her husband when she was 24 years old. He was a college graduate whose economic situation was favorable. They had been keeping company for nine months before they were married and apparently there had been constant irritation in the marital situation. The husband had been critical of the patient's cooking, the way she dressed, and how she spent her time, while she felt that her husband had been very selfish and picayune. Since the marriage, despite her husband's adequate earnings, she worked and bought her own clothing and necessities, her husband maintaining the home and providing the meals. Constant bickering culminated in the patient's leaving her husband after dinner in a restaurant. She had no money with her and so applied to the Travelers Aid Society in the railroad terminal for lodging. She was given shelter for the night and the following morning asked to see the psychiatrist, after the case worker had told her in what ways the society might help her.

She was a well developed, beautiful girl, who was neatly and tidily dressed in clothing of excellent quality. She appeared to be quite frank and reliable in her answers to questions. She presented considerable anxiety over the separation and it was apparent that she very much regretted her action, yet did not feel that she could go to her husband and apologize. She did feel that she wanted to telephone him to tell him where she was, so that he might not worry about her, and did so. He apparently expressed

some regret as to the precipitation of the situation and told the patient that he would come for her as soon as he got through with his work, which he did. Both the husband and wife were seen several days later on appointment. He was an intelligent young man, who keenly regretted the situation and obviously wanted to get rid of some of the anxiety which he presented. Both individuals felt uneasy and each appeared to have the same affective reaction to the situation, with an obvious desire to clear it up and prevent recurrence. After talking it through with him, and later with his wife, the basis of much of their quarreling was cleared up.

Comment: This is but one of several cases of this nature. Reconciliation, which was indicated on both sides, might have taken place without the help of the Travelers Aid Society but there is a question as to whether a more permanent reconciliation was not obtained with that help.

Case 6. W. G. was a 25-year-old, American-born girl, the sixth of nine siblings of Hungarian, Roman Catholic parentage. She had two years of high school education and then worked in dress factories. Her earnings were very meagre, amounting to $3 or $4 per week. Her parents had been comfortably situated economically, but in more recent years had to go on relief. When she was 20 years old the patient met her husband, who was five years older than she was, and after several months courtship they eloped. One year later a daughter was born, the only child the patient had. The husband, an independent carpenter, was only occasionally without work. He was foreign-born and had come to the United States at about 10 years of age. The patient had always been very closely attached to her family, especially to her mother. She resented the fact that her husband apparently failed to show sufficient consideration for her mother. Her runaway was brought about following a trip which her husband took with his mother and her mother, for which the two women were supposed to help defray the expenses, but only the patient's mother did so. Although the patient had threatened to leave home before, she had never done so because her husband had taken her clothing and money away from her. This time she secreted some money and ran away. When she was seen in the clinic she was shy and reserved. She answered questions hesitatingly. She failed to show any interest in her daughter, whom she had left at home. She knew she had deserted the child, yet would speak only of the husband's "mental torture." She accused her husband of being aggressive, overbearing and lordly. "He has no feeling or softness. He is just rough and tough." She wanted him to search her out and come for her.

The husband was seen before he saw the patient and the situation discussed with him. He appeared anxious to help make whatever adjustment was needed, and possible. The patient was then seen and she offered nu-

merous complaints and reasons for not returning to her home city; however, she agreed to go and seemed quite happy about returning. The couple had accepted referral to the local Travelers Aid Society but when a home visit was made she refused their help. She said that her husband would never change and that she would always have her problems with him.

Comment: This case is typical of many runaway wives and mothers. The adjustment in this instance will probably be only a temporary one because one is aware of the emotional immaturity and adolescent behavior of the patient and her inability to recognize the need of psychotherapy.

IV. *Undetermined cases*

This group is included at this point because, as was indicated earlier in this paper, the causes for running away are listed in the frequency of their occurrence. There were 10 cases in this group. Mental status was normal in these patients. There were no evidences of delusions or ideas of persecution. Their emotional reaction, affect and moods were normal. There were no sensorial defects and there were no evidences of hallucinatory activity. These observations were made not only in the clinic but also in the society's guest house, where the patients could be observed more closely. These patients either refused to give information or were obviously untruthful in their statements. In the classification of all the patients seen in the clinic (see Table 1) there is a group listed as "Undiagnosed." In that category are included patients who present psychopathology.

Four of the 10 individuals in this group presented the picture of what is called dromomania. This term was prominently used during the tremendous hegira of adolescents during the depression years. One sees references to this term by Sullenger[5] and by Armstrong.[6] Thousands of boys and girls traveled back and forth across the country, partly because there was no work for them; partly because their economic situation was such that they proved a burden on the family by remaining at home; and partly because of a restlessness which pervaded the entire country. The picture they presented was one of repeated running away without apparent causative factor, except the feeling that they must "move on." This explanation was used by each of the four patients independently. Their apparent restlessness and need for travel had no immediate correlate in family problems. One came from a wealthy

home and the other three from homes in which the economic setting was not a factor. They constituted but a small per cent of the runaways seen in the clinic. There was no opportunity for extensive investigation into their problem because the patients did not stay with the clinic long enough. They had started traveling, and once started, they must for some unknown reason continue this type of activity, apparently, too, in an ever accelerating fashion. Investigation and study might shed an interesting light on this problem.

V. *Economic insecurity*

There were nine cases in this group and since they all followed a fairly uniform pattern only one case will be presented to indicate the type of situation met with.

Case 7. M. F. was a 15-year-old boy of American Jewish parentage. He had run away from home because of failure in his school work, but this failure had only occurred during his last term. His record up to that time had been good and there had been no indication that he was intellectually limited.

His parents had been a financially secure family, having their own business and home in one of the suburban towns near New York. Recently they suffered severe financial reverses and lost their home and business. They had been happy in the small town, having many friends and finding life quite pleasant there. The patient had been well adjusted, both at school and at home. He attended camp for many years and belonged to a Scout group and the Young Men's Christian Association. When the family lost their money they came to New York, took up residence with relatives, and tried to start anew. The patient was placed with other relatives until the parents found work. He apparently missed his parents and friends and difficulties arose at the home of the aunt he was living with, as a result of which he was compared unfavorably with his cousins. Although his parents tried to see him daily, their visits were of necessity very brief. For the first term in a New York high school his work was excellent, but with the second term it went rapidly down hill, and when he received a very poor report card he ran away rather than have his parents see it.

When seen in the clinic he was neatly and cleanly dressed and was quite outspoken and direct in answering questions relative to his situation as a whole. He frankly stated the reason, as he was able to analyze it, for running away and said that it was due not so much to the school situation, which he was sure he was able to cope with, but rather to his own home situation. He was unhappy living with his relatives and was anxious to

return to his own parents. At this time the father was able to find work which gave them sufficient income so that they could take a small apartment and thereby have the boy come back to live with them. This apparently was sufficient to solve the situation as a whole, since the boy returned to school and soon improved his scholastic rating to a considerable degree. His parents were quite understanding of the situation and they were wholehearted in their efforts to assist him in making a new adjustment.

Comment: One might consider the precipitating factor in this runaway as being the poor report card with which the patient was faced. However, it is obvious that this is secondary to the psychological factors which related to the family situation. Proof of the fact that his poor school work was related to these difficulties is shown in the patient's excellent readjustment in the matter of obtaining good grades on his return to school, after the home situation had been taken care of. One might say that the psychological difficulties in the aunt's home caused the runaway. But here, too, we find an earlier causation; namely, the alteration in the economic position of the family. If the family had not lost their money or had been reduced only to a state where they required a change of their home, but not a breaking up of the family, this runaway might never have occurred.

VI. *Specific physical and mental problems*

There were eight cases in this group, of which four had physical deformities, two were homosexual, and two were truants on the basis of a high grade mental deficiency. In an earlier report[1] a case with the type of problem presented in patients with physical deformities was reported. At this time another case will be outlined. In the case cited above that patient had her physical deformity cured by operation. The immediate effect of this alteration upon the patient's psychology was striking and the assumption is warranted that it will be permanent. In the case to be outlined, the physical deformity could not be repaired but by giving the patient insight into her problem definite improvement was apparent.

Case 8. B. L. was a 20-year-old girl, American-born of Italian parentage, who came to New York from an upstate city. The father died when the patient was one year and a half old. When she was 3, the mother remarried. There were six siblings. The economic situation was a rather poor one and several of the children had to help out by working. The patient was unable to give a definite reason for running away. There was a history of tantrums and screaming fits during childhood. She left school at

the age of 14 in the eighth grade, at which time she went to continuation school until she was 17 where she was taught home-making. At 18 she left home to do housework and had several such positions which she did not keep for any considerable length of time. Her last two positions were as waitress. The imprtoant thing in her history is an accident which occurred at the age of 3, at which time the terminal phalanx of the right index finger was amputated.

When the patient was seen in the clinic the physician extended his hand to greet her and observed that as he shook hands with her, the patient kept the fingers curled up. On examination the amputation was noted, with an ungainly appearing stump. The patient was an attractive, clean, neatly dressed girl. She was shy and hesitant about answering questions, but was fairly honest and dependable in the information she gave. She wanted to find work and live in New York and to this end she was assisted by the case worker, so that she obtained employment and lived in a girls' club. She was seen a number of times in the clinic and during that time efforts were made to give her insight into her reaction to her physical deformity. That it played a major part in her behavior was fairly obvious since she constantly kept her hand hidden during the early interviews. This patient remained in New York for about ten months, and at the end of that time told the physician that she wanted to return home and live with her family. Her work in New York had been excellent and she was given a good recommendation by her employer. After her return home she was visited by the local Travelers Aid Society at her own request and indicated that she was happy to be at home and grateful for all the help she had received. She felt that she could be happiest there. She had learned to speak quite frankly about her physical deformity and above all else she stated that for the first time in her life she felt sure of herself.

The two patients who were truants on the basis of mild mental deficiency were included under this grouping because their deficiency, which was borderline (I. Q. 82) in one case and low normal (I. Q. 90) in the other, was of such slight nature that it was felt that they belonged here rather than under the major group of mental deficiency (See Table 1). The inability to carry on the required school work resulted in truancy and, secondarily, in running away from home. The treatment of these two situations was a matter of readjustment of the patients to a field of activity in which they could compete on their own levels. The greater problem was the treatment of the parents, in making them appreciate the limitations of their offspring and accepting those limitations.

VII. *Adventure*

There were four patients in this group. It is felt that none of these cases need be outlined since the problem is exactly what the title connotes. These were all adolescent children, who ran away from home on a "Dick Merriwell" or "Horatio Alger" adventure. On investigation there were no apparent psychological factors, other than that mentioned, found to be responsible for the runaway. One realizes that extensive psychiatric or psychoanalytical investigation might in some of these instances bring to light deeper psychological motives, but the situations at this time did not warrant such probing. In each instance the mental status of the patient was normal. They were all of superior intelligence.

Discussion

Patients are referred to the New York Travelers Aid Society through many sources—social agencies, the police, hotels and private individuals who send to the society the transient, the homeless, or those in need of travel service. Many, of their own accord, go to the Travelers Aid desks in the railroad and bus terminals and ask for help. A large number are referred to the port department of the Travelers Aid Society, which handles transients coming to New York by steamship. Other cases are referred to the New York Travelers Aid Society for help in returning individuals who have run away from New York.

Patients are referred to the psychiatric clinic through the departmental social worker. Cases are referred in which there are problems indicating that the patient's predicament has been brought about through psychological factors which should be investigated and treated in the psychiatric clinic. From a glance at Table 1, it can be seen that the types of patients examined, vary from advanced psychotics to mild behavior problems. Not all Travelers Aid Society cases are put through a routine psychiatric examination. This examination is limited to those who appear to be in need of such help. These patients coming to the clinic are aware of the facilities, which have been outlined to them by the case worker, and have asked for such help. The society comes in contact, through the very nature of its work, with a fairly large group of psychotic

patients who are either a menace to themselves, because of their inability to adjust in a social setting, or a menace to society if allowed to wander about. It has therefore been necessary to hospitalize them and in most cases they are then transferred to a suitable hospital in their state of legal settlement. Many of those who come to the New York Travelers Aid Society appear to need psychiatric care, but they are returned at once to their own city when they feel that they do not want to avail themselves of that service or the services of a social agency.

Armstrong[7] indicates that running away from home is a psychoneurotic reaction of delinquent boys and girls; however, her study was specifically of a delinquent group. She describes the psychology of running away in relation to her court cases. In the Travelers Aid group, which is nondelinquent, it is immediately apparent, on reviewing the diagnostic groups in Table 1, that there is no exact psychiatric classification for the runaway. These individuals range through all the categories of psychiatric diagnosis. As a matter of fact, of the entire group herein presented, there were only eight patients included under the diagnosis of psychoneurosis. It was the feeling in the clinic that the psychoneurotics build their abnormal psychological patterns around their families and homes to such a degree that running away would upset much of that pattern and make for greater uneasiness. By and large, the psychoneurotic individual does not appear to run away from home.

The variability of causative factors producing the situations outlined is rather impressive. There is frequent reference in the literature to disturbing factors in the family, especially changes in father-and-mother relationships, as the primary cause for these problems. There is verification of this assertion in the fact that 19 of the cases fall under the group of *"Children from broken homes."* However, the fact that there are other causes, and that these are varied, is important as indicated by the number of categories used. Important, too, is the fact that the great majority of these individuals are adolescents. It has been stated (Armstrong) that mental deficiency is the most frequent concomitant of a runaway situation. In this group of 300 cases we have not found this to be true; it appears to occur in only 10 to 15 per cent.

This study also indicates what measures have been taken in the treatment of these patients. It appears important in a runaway problem that, instead of returning the individual immediately to the situation from which he has run away, attempts be made to alter that milieu before returning the patient. In the Travelers Aid Society setup this is possible because of the cooperation of agencies in other cities for that purpose. This applies to runaways to New York as well as to returned runaways from New York. Much of the material appears to be amenable to therapy. It is appreciated, however, that this clinic began to function in September, 1936, and that at this time it is too early to draw any conclusions as to the results of the treatment instituted.

Summary

1. In a group of 300 cases seen in the psychiatric clinic of the New York Travelers Aid Society 89 were found to be of the "behavior problem, runaway" group. These cases are herein discussed and presented.

2. This presentation is made to show the types of problem met and the procedures taken in their treatment.

65 Central Park West
New York, N. Y.

References

1. Balser, B. H.: Psychiatric problems in a group of Travelers Aid Society cases. Mental Hygiene, Vol. 22, 1, January, 1938, pp.87-98.
2. Kanner, Leo, Child Psychiatry. Springfield, Ill., 1935.
3. Pierson, Gerald H. J.: In H. A. Christian's "Psychiatry for Practitioners." New York, 1936.
4. Hartwell, Samuel W.: Fifty-five Bad Boys. New York, 1931.
5. Sullenger, T. Earle: Social Determinants in Juvenile Delinquency. New York, 1936.
6. Armstrong, Clairette P.: Six Hundred Sixty Runaway Boys. Boston, 1932.
7. Armstrong, Clairette P.: A psychoneurotic reaction of delinquent boys and girls. J. of Abn. and Soc. Psychol., Vol. 32, No. 3, October, 1937.

A STATISTICAL STUDY OF 1,140 DEMENTIA PRAECOX PATIENTS TREATED WITH METRAZOL*

BY HORATIO M. POLLOCK, PH.D.

Treatment of selected dementia præcox patients with metrazol was begun in some of the New York civil State hospitals in the fall of 1937. During the following year the treatment came into use in all but three of such hospitals. Various types of treatment were tried: In many cases metrazol alone was used; in some cases metrazol and camphor were tried; and in others, metrazol and insulin were combined. In the cases included in this study, either metrazol alone or metrazol with camphor was employed. No cases in which insulin was used previous to, or during the metrazol treatment are included.

The aim of this study is to ascertain as definitely as possible what happened to the patients who received metrazol treatment and the relative efficacy of metrazol and insulin.

In preparation for the study, the civil State hospitals were requested to fill out and send to the central office a standard statistical card report concerning each case treated with metrazol. Such report was forwarded in each instance about one month after the termination of treatment. After eliminating the cards showing previous treatment with insulin and predominately camphor cases, there remained 1,140 cards which were deemed satisfactory for tabulation. The distribution of these cases by hospitals and the reported results are shown by Table 1. It will be observed that 329 cases were treated at Brooklyn State Hospital, 275 at Rockland State Hospital and 121 at Creedmoor State Hospital. Together these comprise 63.6 per cent of all the cases constituting the study. It will also be noted that five hospitals each reported less than 10 treated cases. The other hospitals reported from 14 to 71 cases.

Of the 1,140 patients, 645 were males and 495 females. The sex distribution of treated cases varied widely in the several hospitals. Rockland treated 194 males and 81 females while Brooklyn treated 194 females and 135 males.

*Read before the Quarterly Conference of the Department of Mental Hygiene, at Albany, N. Y., March 18, 1939.

TABLE 1. OUTCOME OF METRAZOL TREATMENT OF DEMENTIA PRAECOX PATIENTS IN NEW YORK CIVIL STATE HOSPITALS, 1938

State hospitals	Total			Recovered			Much improved			Improved			Unimproved			Died		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Brooklyn	135	194	329	5	..	5	26	13	39	46	70	116	57	110	167	1	1	2
Buffalo	24	22	46	..	..	..	..	4	4	10	8	18	14	10	24	..	..	..
Central Islip	39	21	60	..	..	..	4	1	5	4	2	6	31	18	49	..	..	..
Creedmoor	81	40	121	..	..	..	..	..	..	10	3	13	71	37	108	..	..	..
Gowanda	43	28	71	1	1	2	9	8	17	17	6	23	16	12	28	..	1	1
Harlem Valley	..	2	2	..	..	..	..	..	..	..	..	..	..	2	2	..	..	..
Hudson River	33	32	65	..	..	..	1	1	2	5	3	8	27	28	55	..	..	..
Kings Park	35	20	55	..	..	..	..	..	..	1	..	1	32	19	51	2	1	3
Manhattan	13	15	28	1	1	2	5	5	10	2	3	5	5	6	11	..	..	..
Marcy	24	28	52	..	1	1	4	5	9	7	6	13	13	16	29	..	..	..
Pilgrim	2	1	3	..	..	..	..	..	..	..	..	..	2	1	3	..	..	..
Psychiatric Institute	11	3	14	4	2	6	3	..	3	1	..	1	3	1	4	..	..	..
Rockland	194	81	275	..	..	..	15	8	23	55	18	73	124	55	179	..	..	..
St. Lawrence	5	4	9	..	..	..	..	..	..	1	1	2	4	3	7	..	..	..
Utica	3	..	3	2	..	2	..	..	..	..	..	..	1	..	1	..	..	..
Willard	3	4	7	..	..	..	..	1	1	..	..	..	3	3	6	..	..	..
Total	645	495	1140	13	5	18	67	46	113	159	120	279	403	321	724	3	3	6

TABLE 2. COMPARISON OF RESULTS OF METRAZOL TREATMENT AND OF INSULIN TREATMENT WITH RESULTS PREVIOUSLY OBTAINED WITHOUT SPECIAL DRUG TREATMENT

State hospitals	Metrazol-treated patients					Insulin-treated patients						Control group				
	Recovered	Much improved	Improved	Unimproved	Died	Recovered	Much improved	Improved	Unimproved	Still in hospital	Died	Recovered	Much improved	Improved	Unimproved	Died
Brooklyn	1.5	11.9	35.3	50.8	0.6	25.4	25.4	27.1	21.5	0.6	5.6	16.9	8.5	2.3	56.5	10.2
Buffalo	..	8.7	39.1	52.2	..	7.5	38.8	31.3	22.4	..	9.0	17.9	4.5	3.0	62.7	3.0
Central Islip	..	8.3	10.0	81.7	..	6.6	31.6	15.8	43.4	2.6	..	15.8	7.9	2.6	71.1	2.6
Creedmoor	..	..	10.7	89.3	..	15.8	26.3	28.9	28.9	..	2.6	5.3	2.6	..	84.2	5.3
Gowanda	2.8	23.9	32.4	39.4	1.4	40.6	34.4	12.5	6.3	6.3	12.5	3.1	..	12.5	68.8	3.1
Hudson River	..	3.1	12.3	84.6	..	2.7	6.7	28.0	58.7	4.0	1.3	8.0	8.0	10.7	64.0	8.0
Kings Park	..	..	1.8	92.7	5.5	1.8	35.1	19.3	42.1	1.8	1.8	12.3	7.0	7.0	71.9	..
Manhattan	7.1	35.7	17.9	39.3	..	..	24.0	40.0	28.0	8.0	..	..	20.0	..	76.0	4.0
Marcy	1.9	17.3	25.0	55.8	..	4.0	44.0	20.0	28.0	4.0	..	32.0	4.0	4.0	60.0	..
Rockland	..	8.4	26.5	65.1	..	..	25.5	29.8	44.7	..	2.1	12.8	17.0	..	63.8	4.3
Total*	1.6	9.9	24.5	63.5	0.5	12.9	27.1	25.3	33.4	1.3	3.5	11.2	7.4	7.5	65.8	4.6

*Includes cases treated by all State hospitals.

Recovery and improvement rates among treated patients in the several hospitals were far from uniform. The Psychiatric Institute reported 6 recoveries among 14 patients treated, while Rockland State Hospital reported no recoveries among 275 patients and Brooklyn State Hospital, 5 recoveries among 329 patients.

In Table 2 is shown a comparison of results in certain hospitals among metrazol-treated cases, insulin-treated cases and control cases that received no special drug treatment.* Rates were not computed for the hospitals treating less than 25 cases. In every hospital shown in the table, better results were obtained with the use of insulin than with the use of metrazol. In fact, it does not appear that metrazol gives better results than were previously obtained without special drug treatment. This conclusion should not be construed as implying that metrazol is without value. In certain instances it seems to produce remarkable results.

Outcome According to Type of Dementia Præcox

Table 3 shows the distribution of treated cases by types of dementia præcox and gives the rates of outcome among patients of each type. As only 26 cases of the simple type were treated, the rates shown for this type have little significance. Rates of recovery and improvement for the hebephrenic, catatonic, and paranoid types are significant and clearly indicate that better results were obtained among patients of the catatonic and paranoid types than among those of the hebephrenic type. Among treated patients of the last named type, 69.1 per cent were reported as unimproved as compared with 60.8 per cent for the catatonic group and 61.5 per cent for the paranoid group. Among females in the hebephrenic group, the percentage unimproved was 76.8.

Table 4 compares results in the several types obtained by metrazol and insulin treatment. The rates for insulin cases are taken from Malzberg's paper, mentioned above. The data indicate clearly the superiority of insulin therapy in each of the several types of dementia præcox.

*The insulin cases and the control cases are those described in Malzberg's paper on "Outcome of Insulin Treatment of One Thousand Patients with Dementia Præcox." See PSYCHIATRIC QUARTERLY, Vol. 12, No. 3, July, 1938.

TABLE 3. OUTCOME OF METRAZOL TREATMENT ACCORDING TO TYPE OF DEMENTIA PRÆCOX

Types	Total			Recovered			Much improved			Improved			Unimproved			Died		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
								Number										
Simple	19	7	26	1	..	1	1	..	1	2	..	2	15	7	22	..	..	..
Hebephrenic	193	95	288	3	..	3	15	9	24	47	13	60	126	73	199	2	..	2
Catatonic	190	228	418	4	4	8	22	24	46	45	62	107	119	135	254	..	3	3
Paranoid	239	158	397	5	1	6	28	13	41	64	41	105	141	103	244	1	..	1
Others and unclassified	4	7	11	..	..	..	1	..	1	1	4	5	2	3	5	..	..	..
Total	645	495	1140	13	5	18	67	46	113	159	120	279	403	321	724	3	3	6
								Per cent										
Simple	100.0	100.0	100.0	5.3	..	3.8	5.3	..	3.8	10.5	..	7.7	78.9	100.0	84.6	..	..	..
Hebephrenic	100.0	100.0	100.0	1.6	..	1.0	7.8	9.5	8.3	24.4	13.7	20.8	65.3	76.8	69.1	1.0	..	0.7
Catatonic	100.0	100.0	100.0	2.1	1.8	1.9	11.6	10.5	11.0	23.7	27.2	25.6	62.6	59.2	60.8	..	1.3	0.7
Paranoid	100.0	100.0	100.0	2.1	0.6	1.5	11.7	8.2	10.3	26.8	25.9	26.4	59.0	65.2	61.5	0.4	..	0.3
Others and unclassified	100.0	100.0	100.0	..	..	..	25.0	..	9.1	25.0	57.1	45.5	50.0	42.9	45.5	..	..	..
Total	100.0	100.0	100.0	2.0	1.0	1.6	10.4	9.3	9.9	24.7	24.2	24.5	62.5	64.8	63.5	0.5	0.6	0.5

TABLE 4. COMPARATIVE RATES OF RESULTS OF METRAZOL AND INSULIN TREATMENT ACCORDING TO TYPE OF DEMENTIA PRÆCOX

Type	Recovered		Much improved		Improved		Unimproved		Died	
	Metrazol	Insulin	Metrazol	Insulin	Metrazol	Insulin	Metrazol	Insulin	Metrazol	Insulin
Simple	3.8	4.2	3.8	41.7	7.7	37.5	84.6	16.7	..	..
Hebephrenic	1.0	6.3	8.3	25.7	20.8	20.9	69.1	46.1	0.7	1.0
Catatonic	1.9	17.4	11.0	25.6	25.6	27.0	60.8	29.5	0.7	0.6
Paranoid	1.5	12.7	10.3	28.1	26.4	25.7	61.5	31.5	0.3	2.0
Others and unclassified	..	20.0	9.1	40.0	45.5	..	45.5	40.0	..	..
Total	1.6	12.9	9.9	27.1	24.5	25.3	63.5	33.4	0.5	1.3

Age of Patients at Beginning of Treatment

Table 5 shows the outcome of metrazol treatment according to age at beginning of treatment. As would be expected the best results were obtained in the younger patients. None of the treated patients above 40 years of age were reported as recovered and only 6.1 per cent of the cases above 44 years of age were reported as much improved, compared with a general average rate of 9.9. Beyond the age of 25 there seems to be no close relationship between the improvement of the patients and their ages at beginning of treatment.

Duration of Psychosis Before Treatment

Table 6 shows the outcome of metrazol treatment according to duration of psychosis before treatment. Thirteen of the 18 recovered cases were treated within six months from the onset of the psychosis and 42 of the 113 much improved cases had a like duration of psychosis before treatment. It is noteworthy, however, that 203 of the 279 cases reported as improved had suffered with a psychosis from one to ten years. The table indicates that the probability of favorable results is much greater in the cases treated soon after the onset of the psychosis.

Duration of Treatment

The distribution of the treated patients by duration of treatment is shown in Table 7, together with the outcome for each period of treatment. It will be noted that of the 1,140 patients, 244 received treatment from 20 to 29 days, 197 from 40 to 49 days, 183 from 50 to 59 days, 176 from 60 to 69 days, and 107 from 70 to 79 days. There seems to be no close relationship between the period of treatment and the favorable results secured.

Injuries Sustained During Metrazol Treatment

A summary of injuries suffered by patients during metrazol treatment is shown by Table 8. Of the 1,140 patients treated, 87 were reported as suffering some injury during the course of treatment. Naturally the larger numbers of injured patients are reported by the hospitals treating the greater number of patients, although Creedmoor State Hospital reported but 5 injuries among

TABLE 5. OUTCOME OF METRAZOL TREATMENT ACCORDING TO AGE AT BEGINNING OF TREATMENT

Age group, (years)	Total			Recovered			Much improved			Improved			Unimproved			Died		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Number																		
10-14	1	1	2	..	..	..	..	..	..	1	1	2	..	..	..	..	..	..
15-19	30	35	65	1	2	3	6	4	10	11	8	19	12	21	33	..	..	..
20-24	150	79	229	5	1	6	23	9	32	31	13	44	91	56	147	..	..	..
25-29	193	112	305	2	2	4	13	10	23	46	23	69	132	76	208	..	1	1
30-34	153	133	286	3	..	3	12	10	22	40	35	75	96	87	183	2	1	3
35-39	80	67	147	2	..	2	6	6	12	24	20	44	48	40	88	..	1	1
40-44	31	42	73	..	..	..	5	7	12	5	14	19	20	21	41	1	..	1
45-49	6	21	27	..	..	..	2	..	2	1	5	6	3	16	19	..	..	..
50 and over	1	5	6	..	..	..	..	..	..	..	1	1	1	4	5	..	..	..
Total	645	495	1140	13	5	18	67	46	113	159	120	279	403	321	724	3	3	6
Per cent																		
10-14	100.0	100.0	100.0	..	..	..	..	..	..	100.0	100.0	100.0	..	..	..	..	..	..
15-19	100.0	100.0	100.0	3.3	5.7	4.6	20.0	11.4	15.4	36.7	22.9	29.2	40.0	60.0	50.8	..	..	..
20-24	100.0	100.0	100.0	3.3	1.3	2.6	15.3	11.4	14.0	20.7	16.5	19.2	60.7	70.9	64.2	..	..	..
25-29	100.0	100.0	100.0	1.0	1.8	1.3	6.7	8.9	7.5	23.8	20.5	22.6	68.4	67.9	68.2	..	0.9	0.3
30-34	100.0	100.0	100.0	2.0	..	1.0	7.8	7.5	7.7	26.1	26.3	26.2	62.7	65.4	64.0	1.3	0.8	1.0
35-39	100.0	100.0	100.0	2.5	..	1.4	7.5	9.0	8.2	30.0	29.9	29.9	60.0	59.7	59.9	..	1.5	0.7
40-44	100.0	100.0	100.0	..	..	..	16.1	16.7	16.4	16.1	33.3	26.0	64.5	50.0	56.2	3.2	..	1.4
45-49	100.0	100.0	100.0	..	..	..	33.3	..	7.4	16.7	23.8	22.2	50.0	76.2	70.4	..	..	..
50 and over	100.0	100.0	100.0	..	..	..	..	..	..	..	20.0	16.7	100.0	80.0	83.3	..	..	..
Total	100.0	100.0	100.0	2.0	1.0	1.6	10.4	9.3	9.9	24.7	24.2	24.5	62.5	64.8	63.5	0.5	0.6	0.5

TABLE 6. OUTCOME OF METRAZOL TREATMENT ACCORDING TO DURATION OF PSYCHOSIS BEFORE TREATMENT

Total duration of psychosis	Total			Recovered			Much improved			Improved			Unimproved			Died		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
								Number										
Less than 1 month	3	13	16	..	1	1	1	4	5	2	3	5	..	5	5	..	..	..
1 to 3 months	31	31	62	5	3	8	14	10	24	8	8	16	4	10	14	..	..	..
4 to 6 months	31	26	57	4	..	4	7	6	13	9	12	21	11	8	19	..	..	..
7 to 12 months	29	34	63	1	..	1	11	7	18	8	14	22	9	12	21	..	1	1
1 to 2 years	156	143	299	2	1	3	20	11	31	54	38	92	79	92	171	1	1	2
3 to 5 years	199	136	335	1	..	1	7	5	12	50	21	71	141	109	250	..	1	1
6 to 10 years	142	90	232	..	..	..	7	3	10	22	18	40	112	69	181	1	..	1
11 to 14 years	34	13	47	..	..	..	..	..	..	4	5	9	30	8	38	..	..	..
15 to 19 years	10	5	15	..	..	..	..	..	..	..	1	1	9	4	13	1	..	1
20 years and over	10	4	14	..	..	..	..	..	..	2	..	2	8	4	12	..	..	..
Total	645	495	1140	13	5	18	67	46	113	159	120	279	403	321	724	3	3	6
								Per cent										
Less than 1 month	100.0	100.0	100.0	..	7.7	6.3	33.3	30.8	31.3	66.7	23.1	31.3	..	38.5	31.3	..	..	..
1 to 3 months	100.0	100.0	100.0	16.1	9.7	12.9	45.2	32.3	38.7	25.8	25.8	25.8	12.9	32.3	22.6	..	..	..
4 to 6 months	100.0	100.0	100.0	12.9	..	7.0	22.6	23.1	22.8	29.0	46.2	36.8	35.5	30.8	33.3	..	..	..
7 to 12 months	100.0	100.0	100.0	3.4	..	1.6	37.9	20.6	28.6	27.6	41.2	34.9	31.0	35.3	33.3	..	2.9	1.6
1 to 2 years	100.0	100.0	100.0	1.3	0.7	1.0	12.8	7.7	10.4	34.6	26.6	30.8	50.6	64.3	57.2	0.6	0.7	0.7
3 to 5 years	100.0	100.0	100.0	0.5	..	0.3	3.5	3.7	3.6	25.1	15.4	21.2	70.9	80.1	74.6	..	0.7	0.3
6 to 10 years	100.0	100.0	100.0	..	..	..	4.9	3.3	4.3	15.5	20.0	17.2	78.9	76.7	78.0	0.7	..	0.4
11 to 14 years	100.0	100.0	100.0	..	..	..	..	..	..	11.8	38.5	19.1	88.2	61.5	80.9	..	..	..
15 to 19 years	100.0	100.0	100.0	..	..	..	..	..	..	..	20.0	6.7	90.0	80.0	86.7	10.0	..	6.7
2 years and over	100.0	100.0	100.0	..	..	..	..	..	..	20.0	..	14.3	80.0	100.0	85.7	..	..	..
Total	100.0	100.0	100.0	2.0	1.0	1.6	10.4	9.3	9.9	24.7	24.2	24.5	62.5	64.8	63.5	0.5	0.6	0.5

TABLE 7. OUTCOME OF METRAZOL TREATMENT ACCORDING TO DURATION OF TREATMENT

Duration of treatment, (days)	Total			Recovered			Much improved			Improved			Unimproved			Died		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
									Number									
Less than 10	14	8	22	..	..	..	..	1	1	1	1	2	13	5	18	..	1	1
10 to 19	24	32	56	1	3	4	6	2	8	3	6	9	14	21	35	..	..	..
20 to 29	155	89	244	3	..	3	4	8	12	20	12	32	128	68	196	..	1	1
30 to 39	39	35	74	3	..	3	8	9	17	9	6	15	19	20	39	..	..	..
40 to 49	62	135	197	3	1	4	10	7	17	12	45	57	36	82	118	1	..	1
50 to 59	105	78	183	1	1	2	7	6	13	22	16	38	74	54	128	1	1	2
60 to 69	115	61	176	1	..	1	7	7	14	40	18	58	67	36	103	..	..	..
70 to 79	73	34	107	..	..	..	17	3	20	25	10	35	31	21	52	..	..	..
80 to 89	34	9	43	1	..	1	6	2	8	13	2	15	13	5	18	1	..	1
90 to 99	9	5	14	..	..	..	1	..	1	7	..	7	1	5	6	..	..	..
100 and over	15	9	24	..	..	..	1	1	2	7	4	11	7	4	11	..	..	..
Total	645	495	1140	13	5	18	67	46	113	159	120	279	403	321	724	3	3	6
									Per cent									
Less than 10	100.0	100.0	100.0	..	..	..	..	12.5	4.5	7.1	12.5	9.1	92.9	62.5	81.8	..	12.5	4.5
10 to 19	100.0	100.0	100.0	4.2	9.4	7.1	25.0	6.3	14.3	12.5	18.8	16.1	58.3	65.6	62.5	..	..	..
20 to 29	100.0	100.0	100.0	1.9	..	1.2	2.6	9.0	4.9	12.9	13.5	13.1	82.6	76.4	80.3	..	1.1	0.4
30 to 39	100.0	100.0	100.0	7.7	..	4.1	20.5	25.7	23.0	23.1	17.1	20.3	48.7	57.1	52.7	..	..	..
40 to 49	100.0	100.0	100.0	4.8	0.7	2.0	16.1	5.2	8.6	19.4	33.3	28.9	58.1	60.7	59.9	1.6	..	0.5
50 to 59	100.0	100.0	100.0	1.0	1.3	1.1	6.7	7.7	7.1	21.0	20.5	20.8	70.5	69.2	69.9	1.0	1.3	1.1
60 to 69	100.0	100.0	100.0	0.9	..	0.6	6.1	11.5	8.0	34.8	29.5	33.0	58.3	59.0	58.5	..	..	..
70 to 79	100.0	100.0	100.0	..	..	..	23.3	8.8	18.7	34.2	29.4	32.7	42.5	61.8	48.6	..	..	..
80 to 89	100.0	100.0	100.0	2.9	..	2.3	17.6	22.2	18.6	38.2	22.2	34.9	38.2	55.6	41.9	2.9	..	2.3
90 to 99	100.0	100.0	100.0	..	..	..	11.1	..	7.1	77.8	..	50.0	11.1	100.0	42.9	..	..	..
100 and over	100.0	100.0	100.0	..	..	..	6.7	11.1	8.3	46.7	44.4	45.8	46.7	44.4	45.8	..	..	..
Total	100.0	100.0	100.0	2.0	1.0	1.6	10.4	9.3	9.9	24.7	24.2	24.5	62.5	64.8	63.5	0.5	0.6	0.5

TABLE 8. INJURIES TO DEMENTIA PRÆCOX PATIENTS DURING METRAZOL TREATMENT

State hospitals	Total treated patients			Total injured patients			Dislocation of jaw			Fracture of jaw			Fractures of arms or shoulder			Fractures of legs			Dislocation of shoulder or arm			Other injuries		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Brooklyn	135	194	329	8	14	22	8	12	20	..	..	..	..	..	..	..	..	..	..	1	1	..	1	1
Buffalo	24	22	46	3	2	5	..	1*	1	..	..	..	..	..	..	..	..	..	2	..	2	1	1	2
Central Islip	39	21	60	2	2	4	..	1	1	..	..	..	..	1	1	1	..	1	..	..	..	1	..	1
Creedmoor	81	40	121	3	2	5	..	2	2	..	..	..	..	..	..	..	..	..	..	..	..	3	..	3
Gowanda	43	28	71	4	2	6	1	1	2	..	..	..	..	1	1	..	..	..	2	..	2	1	..	1
Harlem Valley	..	2	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hudson River	33	32	65	4	7	11	4	6	10	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Kings Park	35	20	55	3	1	4	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	2	1	3
Manhattan	13	15	28	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Marcy	24	28	52	2	2	4	..	2	2	..	..	..	..	..	..	..	..	..	1	..	1	1	..	1
Pilgrim	2	1	3	2	..	2	2	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Psychiatric Institute	11	3	14	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Rockland	194	81	275	14	8	22	9	6	15	..	..	..	..	..	..	3	1	4	2	1	3	..	..	..
St. Lawrence	5	4	9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Utica	3	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Willard	3	4	7	2	..	2	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..
Total	645	495	1140	47	40	87	26	31	57	1	..	1	..	2	2	4	1	5	8	2	10	9	5	14

*Also dislocated shoulder.

121 patients treated. Brooklyn State Hospital reported 22 injured patients out of 329 treated. The corresponding numbers for Rockland State Hospital were 22 and 275. Hudson River State Hospital reported 11 injured patients out of 65 treated.

Of the 87 injured patients, 57 suffered dislocation of the jaw. Some of the patients suffered such dislocation several times, but no injured patient is counted more than once in the table. Fracture of the jaw occurred in 1 case, fracture of arms and shoulder in 2 cases and fracture of legs in 5 cases. Dislocation of shoulder or arms occurred in 10 cases and other injuries occurred in 14 cases.

It will be noted that of the 645 males 47 suffered injuries while of the 495 women 40 were injured. Six of the 1,140 patients, 3 men and 3 women, died during or following treatment.

Comment

The results of metrazol treatment shown in the foregoing statistical analysis raise grave doubts as to the wisdom of continuing this treatment in its current form as a routine procedure in the State hospitals. The data submitted show clearly the superiority of insulin treatment.

In certain cases in which insulin fails to yield favorable results metrazol perhaps may be found useful as a supplemental treatment.

The matter of injury to patients and the severity of the convulsions experienced by some of the patients treated are also worthy of consideration.

Department of Mental Hygiene
Albany, N. Y.

DISCUSSION

BY CLARENCE H. BELLINGER, M. D.

Commissioner Tiffany—Ladies and Gentlemen:

I have listened with interest to Dr. Pollock's paper which has been presented by Dr. Malzberg.

The treatment of schizophrenia with metrazol, according to the technique recommended by Meduna, was started at the Brooklyn State Hospital on October 30, 1937. During this period we have administered 16,082 treatments to 278 men and 260 women, a total of 538 patients, with the following results:

Diagnosis	Total treated	On parole	Discharged	Died	Transferred	In hospital
Dementia præcox	494	100	35	6	35	318
Manic-depressive	23	16	0	0	0	7
Involutional psychosis	20	8	1	1	2	8
Psychoneurosis	1	1	0	0	0	0
Total	538	125	36	7	37	333

Nine men and seven women—all cases of dementia præcox—were returned from parole and are included among the 318 now in the hospital.

It is interesting to note that of the 100 cases of dementia præcox which we have on parole at the present time, 54 were catatonic, 36 paranoid and 10 hebephrenic. Many of the patients who did not improve sufficiently to leave the hospital improved in their general conduct to the extent that they are much easier to care for. Of the 318 schizophrenic patients remaining in the hospital, 106 have shown material improvement; 212 are unimproved. Many of the patients treated with metrazol had been ill for several years and were treated at the request of relatives and physicians. It was the general rule that the earlier the treatment was instituted, the better the results.

The causes of death in the cases of 2 men and 5 women who died during treatment were as follows:

One male patient died following an open operation for reduction of a fractured hip; the second from lung abscess. Three female patients died of lung abscess; 2 of bronchopneumonia.

The following is a list of the known untoward conditions which developed incidental to the administration of 16,082 metrazol treatments:

Untoward conditions		No. of convulsions before injury
Fractured shoulder	2	6—— 8
Fractured elbow	2	11——13
Fractured hip	3	9——15——16
Dislocated shoulder	3	6—— 6—— 1
Lung abscess	9	
Bronchopneumonia	2	
Dislocated jaw	118	

As to the cases in which dislocation of the jaw was a complication, I would say that in many instances the dislocation was only partial and occurred more than once in the same case. Reduction in each instance was made before the patient regained consciousness and while the tissues were relaxed. It was never necessary to apply any dressing and none of the patients seemed to suffer any inconvenience.

The development of lung abscesses incidental to the administration of metrazol is mentioned in the literature, and early in our experience we encountered 9 cases. X-ray examinations showed that they were unquestionably due to an infarct near the center of the lung. The location of the lesion was practically the same in each of the cases.

Dr. Mark Zeifert, senior assistant physician at this hospital, observed that in some cases where blood rushed into the needle before the metrazol could be forced into the vein, there was no tendency to coagulate, while in others the blood coagulated almost instantly, making it necessary to throw away the metrazol and start with a new dose. The clots in some instances were very small and appeared granular. These, the doctor believed, were responsible for the pulmonary complications which we had observed. In order to correct this he added an anticoagulant to the metrazol solution which we have employed during the past 8 months, during which time we have had no difficulty with clots forming in the syringe and none of our patients have developed pumonary complications. Dr. Zeifert has prepared a paper on the subject for submission at the next interhospital conference, which should be published in the PSYCHIATRIC QUARTERLY.

Some of our patients, immediately after receiving treatment, have complained of pain in the back, especially in the lumbar region. We invariably made an X-ray examination of the backs of these patients but on no occasion did we discover evidence of fracture, probably due to the fact that we examined only the lower dorsal and lumbar regions, where the pain seemed to be centered. However, recently Dr. Nolan D. C. Lewis of the Psychiatric Institute called attention to the fact that in some of the cases at that insti-

tution damage to the vertebrae in the middorsal region had been demonsrated. When I learned of this, I arranged with Dr. Lewis to permit several members of the staff and the technician to examine the plates which had been taken at the Institute. We have since examined the spines of 50 male and 50 female, a total of 100 patients, who had received metrazol treatment here, more particularly those who during their treatment had complained of pain in the back. None of the patients at the present time show any physical or neurological symptoms and none show any changes in posture.

The oldest patient in the group was 40, the youngest 19, the average age being 28.

The average number of convulsions had by the male patients was 29, while that of the female patients was 19—the general average being 24.

All plates were first read by our visiting radiologist, and later reviewed by one of the leading men in the metropolitan area who is eminently qualified by virtue of his training and experience to speak with authority in matters of this kind. In 79 cases the plates were negative for fracture. In the cases of 14 men and 7 women—a total of 21 patients—changes were found in the general contour and texture of some of the vertebrae, particularly in the middorsal region. In none of the patients was there any fracture of the spinous or transverse processes and no evidence of fracture of the lamina. The lesions were principally of a compressive nature, confined to the bodies of the vertebrae. In all the cases showing definite pathology, the plates looked quite unlike those of normal spines in that they presented a general mottled appearance and showed definite evidence of decalcification. I have been told that the appearance of these spines resembles to some extent conditions found in tetany and those resulting from either the ingestion of the various heavy metals or some radioactive substance. In this connection it is interesting to note that in four cases where the patients had received a second course of metrazol, at the request of relatives, the X-ray plates of the spine showed no definite pathology and no appreciable decalcification.

Of the 14 men showing definite changes in the spine, 7 were of the athletic type while 7 were of the asthenic type. Of the 7 women, 2 were of the athletic type, 5 of the asthenic type.

The average age of the men showing spinal change was 28 years, women 24 years.

The average number of convulsions had by the male patients was 31; the female patients 20; general average 25.

At this time I wish to call attention to the fact that of the 278 men treated, 17 have been discharged, 81 are on parole. Of the 260 women treated, 19 have been discharged, 44 are on parole.

In the course of our investigation, we made X-ray examinations of the spines of 10 dementia præcox patients who had been in the hospital for a considerable period of time and who are of the asthenic type. In none of these cases was there either any evidence of decalcification of the bones of the spine or any crushing of the vertebrae. We also X-rayed the spines of 10 patients who had suffered from epilepsy over a considerable period of time, all of which were negative.

Examination of the teeth of the 21 patients showing spinal pathology revealed that in 17 cases the molars appeared chalky, there was a tendency to caries along the gum line and a definite lack of lustre to the enamel which would seem to indicate a calcium deficiency.

We are making X-ray studies of the osseous system in some of our cases showing the greatest spinal abnormality. In the case of one patient, a man 24 years of age, who had 30 convulsions and whose treatments were completed on April 21, 1938, the bones of the head, arms, hands and pelvis showed no demonstrable pathology. However, there appeared to be areas of decalcification in the necks of both femurs which were described as being of a cystic character.

Early in this investigation we communicated with the officers of the Bilhuber-Knoll Corporation, East Orange, N. J., manufacturers of metrazol, who immediately became interested in our findings to the extent that their medical director, Dr. Weston, and a representative of the company came to the hospital and studied the X-ray plates. They stated that metrazol contained no heavy metals, no radium and no radiographic substances.

These cases have been studied by our visiting orthopedic surgeon and other specialists in the field, all of whom have advised me that after viewing the plates, examining the patients and making a general survey of the situation, they feel that none of our patients are in need of braces, casts or other orthopedic appliances. I quote the following from a statement made by our visiting orthopedic surgeon:

> Upon looking at these plates, one gathers the impression that they are senile bones, but in view of the age of the patients, one cannot help but believe that we are dealing here with osteoporosis and hence there must be some calcium disturbance at work. The X-ray plates show compression such as we see incidental to senile bone change. One should always keep in mind parathyroid disturbances as a direct or indirect result of metrazol treatment. As for the treatment of the present condition of these patients, no specific orthopedic measures seem to be indicated. However, I would suggest the administration of calcium gluconate, viosterol and ultraviolet light.

The doctor stated that he saw no reason why the daily activities of these patients should be changed in any way other than that they should refrain from heavy lifting. He was inclined to believe that the prognosis was good.

I agree with those who have studied the X-ray plates taken at this hospital and who believe that the changes which we see in the spines of some of our patients who have been treated with metrazol are due to two factors —one which interferes with calcium metabolism bringing about a decalcification of some of the bones; a second, which I believe to be less important, is the mechanical force incidental to muscular contraction.

It is difficult to understand why one group of patients should show definite bone change and another group subject to the same amount and type of treatment should show practically no change in their osseous system. I believe that this can only be accounted for by some definite difference in the constitutional makeup of the individual patient.

As to the benefits to be derived from the convulsive treatment of schizophrenia, I am of the opinion that metrazol is of distinct value in the treatment of moderately advanced cases. While I favor the hypoglycemic treatment in the early cases, we have found that some of the later cases which did not yield to insulin were favorably influenced by the administration of metrazol. We have used metrazol to some extent as an adjunct to insulin, especially in cases of catatonic dementia præcox and believe that the action of insulin in these cases is somewhat augmented by the submission of the individual patient to from 5 to 10 metrazol convulsions.

I find that the conduct of many of our troublesome, destructive patients who have been in the hospital over a long period of time, has materially improved following the administration of metrazol.

I would recommend that in all cases where metrazol treatment is to be undertaken, the patients be given a course of calcium gluconate and viosterol for a period of at least one week prior to the beginning of the metrazol treatment and that the administration of calcium gluconate and viosterol be continued throughout the entire treatment period.

Brooklyn State Hospital
681 Clarkson Avenue
Brooklyn, N. Y.

LISTENING TO A STAFF CONFERENCE

BY JOSEPH CHASSELL, M. D.

For the individual physician, the routine staff conference in a mental hospital may easily become a bore or an occasion for wool-gathering. To listen intelligently to case presentations, one needs some definite interest. If one happens to have a keen pride in "diagnosis," that will keep him awake, at least to a limited extent. If one has some special theory he is testing, that too will sustain interest.

In the effort to increase my span of interest, and so of attention, I have experimented with various methods of organizing my notes. The following arrangement, in printed form, I have found the most helpful to date. It derives from many sources. It may be that others will find it useful. Perhaps each one must develop his own system if it is to be effective.

The average presentation, of course, does not elicit answers to many of the items listed in the following outline. However, the gaps then become evident, and one is led to ask pertinent questions.

CASE FORMULATION FOR THERAPY NAME

Doctor Date Age Marital status Religion Occupation Education

1. SALIENT FEATURES

   Symptoms, general picture of personality and setting, details of F. H. relevant thereto:

2. CONFLICT

   What present problem do symptoms attempt to solve? Precipitating factors, including organic defects, difficult situations, eruption of repressed cravings, and so forth. Hypothetical suggestions as well as established facts should be considered.

3. PATTERN

   What mechanisms are used in trying to relieve conflict? For example: repression, substitution, compensation, projection, catatonic inhibition. But note especially patterns used aside from acutely psychotic mechanisms.

4. ORIGINS

   Where were patterns used before, and why? At what age was this behavior first clearly established? (Presumably dynamics of illness were already present then.) Anecdotes displaying character in various situations should be related.

5. SECONDARY GAIN

Possible value of illness besides its being an attempted way out of the chief difficulty.

6. ASSETS

What have we to work with that is favorable; where was patient at least partially adjusted; what achievements, talents, positive interests are there? Catalogue intelligence and physique.

7. LIABILITIES

List serious personal handicaps, impossible external situation, deep-dyed tendency to fantasy, projection, et cetera.

Data leading to discouraging prognosis.

8. DIAGNOSIS

9. PROPOSED TREATMENT

Sheppard and Enoch Pratt Hospital
Towson, Md.

BOOK REVIEWS

Research in Mental Hospitals. A survey and tentative appraisal of research activities and possibilities in state hospitals and other tax-supported institutions for the mentally ill and defective in the United States. Conducted by the National Committee for Mental Hygiene, 1936-1937. Copyright 1938 by the committee. 151 pages including appendices and index. Paperbound.

Psychiatric research is young but it is eager. That it should take stock of its facilities preparatory to embarking on the broad highways of future investigation was recognized by the National Committee for Mental Hygiene. A grant was made to the committee in April, 1936, by the John and Mary R. Markle Foundation, and Charles P. Fitzpatrick, M. D., clinical director at Butler Hospital, Providence, R. I., was named field representative; illness later forced Dr. Fitzpatrick to withdraw and he was replaced by Winfred Overholser, M. D., former commissioner of mental diseases of Massachusetts, who is now superintendent of St. Elizabeths Hospital, Washington, D. C. Assistance was provided by Samuel W. Hamilton, M. D., director, and Joseph Zubin, Ph.D., statistician, of the Mental Hospital Survey Committee and by Paul O. Komora, associate secretary of the National Committee for Mental Hygiene.

Two hundred seventy-three questionnaires were issued, of which 224 were returned. Of the latter number, 10 "did not give sufficient information to warrant their inclusion in the analysis." Thus, the total number of hospitals on which the analysis was based was 214—a representative sampling which covered the entire country, divided into nine sections.

There are five parts in the survey. Part I summarizes the entire work, and permits one to see at a glance the major findings and conclusions. Part II interprets the findings as they concern state hospitals especially, "since these institutions form the backbone of public provisions for the care and treatment of the mentally ill in the United States and are the center of interest of our study in the main." Part III describes the research activities and facilities in the principal hospital centers; here 20 research centers are discussed from the standpoints of clinical, teaching and research arrangements. The centers listed in this part are considered to be the leaders in the field. Part IV presents a statistical analysis of all the findings with the purpose of measuring the factors entering into determining a hospital's

fitness for research work. Part V contains rating scales, geographical data and supplemental information.

The report is so concise and so well arranged that comment on any part would have to include much direct quotation. However, from the "summary of findings" in Part I, a few excerpts may be printed:

> Twenty of the 273 public institutions can be designated as research centers because of the character and quality of their investigatory work, the caliber of their personnel and the resources at their disposal for scientific studies . . .
>
> In addition to these twenty centers there are thirty-two publicly supported hospitals that offer distinct possibilities for research work, judging by the advantages they enjoy in the way of basic facilities that lend themselves to investigative activities . . .
>
> Some 150 of the 1,700 staff physicians in the public mental institutions of the country show a marked interest in and ability for investigative work.
>
> Research interest is most marked in the Middle Atlantic, New England and East North Central states.
>
> Present conditions are not favorable for the prosecution of research in 80 per cent of the institutions covered by this study.
>
> It is estimated that not more than two or three million dollars are expended annually for psychiatric research in the United States and that, of this amount, more than half is derived from foundations, individuals and private agencies.
>
> . . . in answer to the question, "Should research undertakings in your state be centralized in one research institute?" half of the men (hospital superintendents) answered in the affirmative and half in the negative.
>
> Superintendents stated that the chief deterrents to the prosecution of research in mental hospitals are inadequate staffs, remuneration insufficient to attract the best men, difficulty in securing facilities and lack of funds for investigatory purposes.

The emphasis in the study appears to be upon the desirability of building upon the facilities that present themselves, that is, through the organizations set up by the most progressive of the states, and upon imbuing the states that are less progressive in this respect, with the need for establishing a public policy of supporting psychiatric research. Through research, means could be found for alleviating the enormous burden under which 546,906 patients daily are being cared for in mental institutions of the United States.

The survey is timely, clear and well administered. It should receive the close consideration of those who have the public welfare at heart.

Emotions and Bodily Changes. A survey of literature on psychosomatic interrelationships, 1910-1933, Second Edition, with supplementary introduction and additional bibliography. By H. FLANDERS DUNBAR, M. D., Med. Sc.D., Ph.D., Columbia University Press, New York, 1938. 601 pages. Price $5.00.

"When medicine has apprehended the psychosomatic problem and assimilated it, the adjective will be obsolete; all medicine will be psychosomatic." These words used by Dunbar in response to criticisms directed towards the choice of the subtitle of this work, express the attitude of the constantly increasing number of workers and proponents in this particular field of scientific medical endeavor. That interest in the subject is increasing is expemplified by the necessity for this second edition of the author's successful attempt to review its literature. When one considers that the work is fundamentally an annotated bibliography this popularity is even more impressive. The final proof, if more is needed, can be found in the establishment of the journal and monograph series, "Psychosomatic Medicine," devoted exclusively to digests, reviews and original articles on the general subject.

This second edition consists of a reprint of the first edition with a supplementary introduction reviewing the developments since 1933 and an additional bibliography of 107 publications sampling the material published between 1933 and 1938. The supplementary introduction concerns itself mainly with general aspects and does not attempt to review each of the clinical fields covered in the original edition since the author preferred to leave those problems to the journal, *Psychosomatic Medicine*. It does however, call especial attention to certain focal problems including mortality, morbidity and accidents. It also contains pertinent comments on research methods, problems for investigation and future needs.

To those familiar with this monumental work, nothing further need be said. To those not as yet conversant with it this can be said: it is an invaluable reference work in a field which is unfortunately new, it is inclusive in a field which is tremendous in scope and above all it is stimulating. To those who would hold aloof reference can be made to the issue of the *Saturday Evening Post* of May 20, 1939, and to a story therein by Hannah Lees, entitled, "The Emotional Angle," in which an obstinate gastric ulcer is cured by emotional therapy. The subject has invaded popular fiction.

To close as we began, with a quotation, "Today some understanding of personality factors in health and illness, together with an informed awareness of psychosomatic problems and ways of dealing with them, is the obligation of every physician interested in the preventive as well as the therapeutic aspects of his profession."

Social Work Year Book 1939. Russell H. Kurtz, editor. Fifth issue. Russell Sage Foundation, New York, 1939. 708 pages and index. Price $3.50.

This volume, published biennially by the Russell Sage Foundation, is of great value to social workers. It is written in encyclopedic form, reporting the present standing of "organized activities in social work and in related fields," as the subtitles suggest. The material is arranged in three sections under the following headings: Part I—Topical articles; Part II—Public assistance in the states; and Part III—Directories of agencies—national and state (public and private).

The 82 topical articles are each written by an authority in his particular field and cover subjects ranging from the administration of social agencies to your programs. These articles do not concern any particular agency but rather are descriptive of the broad scope and functions of the various types of agencies; the undertaking is to give a cross section of the work done in the different fields in social work. Each article is followed by an up-to-date bibliography on the subject discussed. Among the contributors are the following persons, who are well known to psychiatrists and social workers: Karl Bowman (Mental Hygiene), Healey and Bronner (Behavior Problems), Clara Bassett (Psychiatric Social Work), Edwin F. Dailey, M. D. (Maternal and Child Health), Jane Hoey (Aid to Dependent Children), Harold Lund (Family Social Work), Thomas Parran, M. D. (Public Health), and Kenneth L. M. Pray (Education for Social Work).

A new section, Public Assistance, has been added to the current issue volume because of the "increased emphasis" under governmental participation in social work. This consists of descriptions of various public assistance programs in effect in each state as of October, 1938, covering the programs of old age assistance, aid to the blind, aid to dependent children, general assistance, local relief, farm security administration grants and W. P. A. employment.

The third section consists of the directory of national and state agencies, both public and private. Included in this category are such organizations as the American Psychiatric Association, American Association of Social Workers, American Bar Association, American Federation of Labor and American Medical Association. The sketch of each agency includes the official title, date of founding, business address, name of executive officer and summary of the activities and purposes of the organization and the periodicals published.

The book is recommended to all social workers and to all others whose fields of activity come into touch with social work in any of its phases.

School and Community. A study of the demographic and economic background of education in the State of New York. By JULIUS B. MALLER. The McGraw-Hill Book Company, Inc., New York and London. 1939. 360 pages.

This volume constitutes one aspect of the "Inquiry Into the Character and Cost of Public Education in the State of New York" conducted for the Board of Regents. In a real sense it is fundamental to an understanding of the educational process as a whole, because the latter is molded in structure and function by and for the population with which it deals. As is well-known by this time, the past decade has witnessed profound changes in population. Trends have shifted very abruptly. The population is rapidly approaching a stationary level, and its age constitution is being altered accordingly. Furthermore, there is at least a temporary halt to the flow of population to the large metropolitan areas. The combination of these two trends is resulting in a reduction in the number of children of school age and in a transfer of the school population from one area to another. On the other hand, social changes resulting in part from the prolonged economic depression are keeping children in school for longer periods. These two sets of forces—the demographic and the social—are responsible for new administrative problems. In the first place, additional school facilities must be planned with an eye to the size of the future population, and with due attention to the financial resources of the State and of local communities. In the second place, the curriculum must be revised to be more in harmony with the changing economic order.

Dr. Maller has given very useful summaries of population trends both in New York State and in New York City, and has traced their relation to the educational process. Readers of the PSYCHIATRIC QUARTERLY will be especially interested in the chapters summarizing vital statistics and certain social indices. They will probably be provoked into considering the relation of population trends to mental disease, as the latter will undoubtedly be affected by the steady aging of the population. As the school is beginning to play an important part in the conservation of mental health, it is perhaps unfortunate that no consideration of these problems is found in the present volume. In passing, reference may be made to two minor slips on page 334, where the Department of Mental Hygiene is referred to as the Department of Hospitals, and where psychopathic cases are said to be included with mental defectives in state institutions. On the whole, however, the book must be regarded as a very useful summary of the facts showing the correlation between the school and the community.

A Biological Approach to the Problem of Abnormal Behavior. By MILTON HARRINGTON, M. D. Distributed by the Science Press Printing Company, Lancaster, Pa., 1938. 459 pages. $4.00.

Dr. Harrington has read and digested the work of Sherrington ("The Integrative Action of the Nervous System"), Pavlov, Watson ("Behaviorism"), McDougall, and Kraepelin. To this he has added the James-Lange theory of emotions and the "wax tablet" theory of memory and has thus concocted his Biological Approach to the Problem of Abnormal Behavior. This book denies the existence of the psyche and of the unconscious and considers behavior the result of, and consciousness a by-product of, the function of the nervous system. Consciousness is an "epiphenomenon" of the reaction of the nervous system to a stimulus. The unconscious is merely an imperceptible conscious. Harrington states that this is his theory of psychology and calls the normal operation of this theory psychophysiology.

Abnormal behavior can result only when there is a change in the structure of the nervous system. This structure may be altered by "heredity, somatic disease, wrong education, and the stimuli afforded by difficult or trying situations." This alteration in structure is at the root of psychopathology. "Psycho-orthology" aims at correcting "psychopathology" and reinstating "psychophysiology." It refers to the treatment and prevention of mental disease and is deferred for another volume.

There can hardly be any quarrel with these doctrines other than to note that they present nothing new to psychology. Harrington does offer a rather unnecessary change in terminology but the book consists mainly of an accentuation of mechanism and an attack on all views which attempt to go beyond mechanism. The attack on psychoanalysis, to which more than half the work is devoted, seems rather belated and is so definitely tinged with affect as to vitiate whatever merit it may have. Further the complete denial of an understanding of Adolf Meyer's psychobiology in a book which is actually psychobiological is, at the very least, in bad taste. For some years now both psychobiology and psychoanalysis have been accepted as extremely useful and fundamentally sound. These theories do not try to invalidate mechanistic psychology but have built a superstructure on the valid foundations of mechanism. Nor are they any longer in need of defense. To attack them tends rather to discredit the attacker than the things attacked. Without reference to the writings of Jelliffe, Stanley Cobb, and H. Flanders Dunbar, this book gives the impression of being woefully outdated. Even in the periodical field, within one year after Harrington's publication, there have appeared two new journals, namely *Psychiatry* and *Psychosomatic Medicine*, which continue to emphasize the obsolescence of the author's viewpoint.

Teachable Moments. A new approach to health. By JAY B. NASH, Ph.D. A. S. Barnes and Company, New York, 1938. 243 pages. Price $1.50.

In this tidy little volume, formalized teaching of hygiene in the classroom is on the griddle. In its place, Nash offers the following four "teachable moments": "When a child exhibits curiosity. When a child feels that differences make him conspicuous. When adults are scared. When parents want something better for their children." Aside from these moments, Nash maintains, the teaching of hygiene in the classroom is so much water rolling off a duck's back. The teaching of health, he says in substance, should not be the exclusive province of physical education departments, as is generally the case; this has two unfortunate effects: It relieves all other teachers of responsibility for the health-consciousness of their charges, and it dissolves the general aspect of health in a group of activities which "while they are quite important from a health aspect, are by no means all-important."

He suggests the formation of a "health coordinating council" in every school; such a committee would have on it a doctor, school nurse, and representatives from the physical education department, from the department of general science, and perhaps from each divisional branch within the school; also represented should be the cafeteria, the janitorial staff, parent-teacher association and even student leaders in the upper grades.

The style is simple and direct; the trend is evangelical; the complaint against existing hygiene teaching methods is severe. The introduction promises the mental hygienist more than is achieved later in the book. Nash says, "Specialists have torn the individual to pieces—one treats his body, another his mind, another his soul . . . All good and excellent work, but the individual functions as a whole . . ." So far so good; the psychobiological point of view is stated. Now for its realization. Health, Nash tells us, is "the ability of the human body to sustain adaptive effort, or to say it more simply, to do more things and to do them more easily." This, as well as some other language of the work, is definitely evangelical; witness that in the introduction he addresses the book (in part) to individuals "who organically speaking are 'looking for a landing place' when they should be 'holding their altitude.'" Here is hygiene teaching on the level of Bernarr MacFadden. Brace up! Life the abundant life! *Do more and do it more easily!* Could we not assume that there are some individuals whose adaptive efforts have reached a limit of altitude and who should be seeking, if anything, a landing place?

Despite the earlier statement of the concept of the individual functioning as a whole, the theme of health ideals is expressed through an automotive analogy. A few passing thrusts at the dynamics of personality

(which fall short of the mark), and the rest is physiology dressed up in homespun philosophy.

The Genetics of Schizophrenia. By FRANZ J. KALLMANN, M. D., with the assistance of SENTA JONES RYPINS, A. B., and with an introduction by Nolan D. C. Lewis, M. D. 291 pages. 1938. J. J. Augustin, publisher, New York City. Price $5.00.

Psychiatrists, in common with others who treat diseases they cannot cure, are prone to seek an explanation in heredity for the symptoms they fail to relieve. It is remarkable, therefore, that such a book as "The Genetics of Schizophrenia" has not appeared before. It is essentially the work of one man, who studied 1,087 schizophrenic cases admitted to the Herzberg Hospital in Berlin during the 10 years, 1893-1902. Direct descendants and correlative lines of these patients have been thoroughly investigated, and the results have been made available in a comprehensive review, so tabulated and so fully explained in the text as to make special mathematical or genetic training unnecessary for its understanding. Moreover, the author has abstracted many of the cases he reviewed in such a way as to leave no doubt of his criteria of schizophrenia; and this section of the book is worthy of special note as an example of condensation of case material which retains clarity and interest.

No attempt will be made to discuss conclusions here, because to lift them from their context would rob them of the conviction they properly carry. Let it be said, however, that these conclusions are worth investigating, and that any present estimate of the importance of this scholarly work probably errs on the side of understatement.

Die Familienpflege Kranksinniger. (The family care of the mentally Ill). Dr. Med. Ernst Bufe, Director of Allenberg Mental Hospital, Wehlau, East Prussia. 230 pages. Price, clothbound, R. M. 8.70. Carl Marhold Verlagsbuchhandlung, Halle A. S., Prussia, Germany, 1939.

Family care of mental patients is winning favor throughout the civilized world. Its possibilities and its advantages are gradually being recognized and active interest in family-care methods is being developed. The question Is family care practicable? is no longer asked, but rather, What system of family care should be adopted, and to what extent should family care be used? The book before us is designed to assist in answering the latter questions.

The author of this valuable volume is Dr. Ernst Bufe, one of the most enthusiastic advocates of family care in Europe. Before going to Wehlau in

East Prussia he was on the medical staff of the mental hospital at Uchtspringe in the Saxon province of Prussia. It was here that Konrad Alt did his great work in the development of family care and it was here that he wrote his small treatise, "Concerning the Family Care of Mental Patients." The mantle of Konrad Alt fell on Ernst Bufe and the latter, for several years past, has been a leader in promoting family care in Germany.

In "Familienpflege Kranksinniger," Dr. Bufe sets forth the history of the development of family care in the various countries of Europe. The period prior to 1902, which was covered in Alt's book, is briefly summarized. The period since 1902 is given more thorough treatment and the status of family care in all of the principal countries of the world is described.

The second part of the book deals with the value of family care and the methods used in various countries in selecting patients and families and in supervising the work. The author realizes that methods must vary and to be effective must be adapted to local conditions. It is noteworthy that nearly every intelligent effort to establish family care has met with success.

A valuable feature of the book is the discussion of the advantages of family care. These are set forth under three headings, namely (1) Advantages for the hospital, (2) Advantages for the family that cares for patients, and (3) Advantages for the patients.

Under (1) the author quotes Kolb who says that family care is the best means of instilling new life in the routine of an old mental hospital, and of showing the personnel and the community the possibility and desirability of extramural treatment. In every mental hospital are many old cases that would favorably respond to the better living conditions found in good homes. The hospital relieved of such patients would have a better opportunity to give intensive treatment to new admissions. The work of the hospital is aided by family care, as the latter in many cases expedites improvement and recovery and prepares the way for parole and community care. Moreover, with an adequate system of family care, a mental hospital is insured against overcrowding.

Under (2) the author mentions several advantages which accrue to the family that cares for patients. The most obvious of these is the steady income obtained, and the gain derived from the labor of patients. Other advantages are the outlet for altruistic sentiments and the raising of the standard of living in the home in response to official requirements for family care and frequent inspections. Homes in which patients are cared for become better furnished and better kept, partly because they are open for official visits at all times and partly because the family wishes to measure up to its responsibilities.

Under (3) the author sets forth the principal advantages of family care to patients, as follows:

a. An approach to normal existence
b. A larger measure of freedom than is possible in a hospital
c. Recognition of individual needs and wishes
d. An opportunity to be of service to others
e. An opportunity to enjoy community life

These advantages and others are thoroughly discussed.

"Die Familienpflege Kranksinniger" supplements in excellent manner the book of Konrad Alt published in 1903. It should exert wide influence in promoting family care in German-speaking countries.

The Mechanism of Thought, Imagery and Hallucination. By JOSHUA ROSETT. Columbia University Press, New York, 1939. 289 pages. Price $3.00.

This book, written by a neurologist, presents an approach to the subjects of thought and hallucination strictly from the organic, i. e., neuroanatomic and neurophysiologic, viewpoint. It contains a wealth of factual material, is based on an extensive study of the literature and is in various respects original in its approach and presentation.

In Part One, entitled "Fundamentals," the author discusses the basic mental phenomena (sensation, feeling, will, orientation, emotion, consciousness, et cetera) and develops his views on the structure and function of the mental personality. The anatomy and physiology of the nervous system, the differences between the cerebrospinal and the autonomous nervous system, between cortical and noncortical functions are reviewed; and the great importance of the thalamus and of the cerebral reflex are (sensory pathway, thalamus, cortex, association systems, motor pathways) is stressed. The close interdependence of consciousness with the emotional state, on the one hand, is pointed out; on the other hand, thalamus, emotion and feelings (graded by intensity) are contrasted with cortex, knowing and sensation (graded by clarity and accuracy). Every nerve impulse causes certain changes of a permanent nature in the body, and succeeding nerve impulses, in their passage through the association system are modified in correspondence with previous experiences. This explains how past experiences can be incorporated in a reaction to a present situation and how memories can be accumulated. The author advances and supports the theory that "all memories reside in every part of the association system," or that "all memories are contained in each of the nerve fibers of the association system." The final chapter of the first part is devoted to a discussion of "Representation

and Symbolism,'' with interesting excursions into nonmedical fields, e. g., art, language, government. ''The biological significance of symbolism is the conservation of time and energy, enabling the individual to respond to a complex situation as a whole.'' The phenomena of conditioned reflexes, illusion and delusion are based on representation and symbolism.

Part Two, which bears the heading ''Mechanisms'' gives definitions of thought, imagery and hallucination, based on the general concept developed in Part One. The ''physiological and anatomical fact that the cessation of activity of a link in the nerve pathway results in a flaring up of the function of the nerve link which succeeds the former in the sound direction of nerve conduction'' is felt to be of outstanding significance for an understanding of the problems under consideration. A diminution of function in the sensory portion of the nerve pathway, for instance, would thus lead to an activation of function in the following portion, the association system. ''Thought, imagery and hallucination, in the order mentioned, are conditioned by an increasing degree of inactivity of the sensory receptive apparatus and therefore by increasing amounts of disorientation in the present and relatively immediate surroundings . . . Thought, imagery and hallucination are, in the order mentioned, increasingly vivid and increasingly inaccurate subjective reproductions of objective experiences.'' In the concluding remarks, the function of thought is defined as ''a subjective reproduction of objective experiences, in which orientation in the past is coexistent with and guided by a large amount of orientation in the present, and which notwithstanding the vagueness of the sensations reexperienced, is accurate with respect to their relations as they are integrated into memories of situations. Increasingly smaller amounts of orientation in the present, making for a greater degree of vividness of the subjective reproduction of objective experiences and correspondingly increasing degrees of inaccuracy of the relations of their elements, constitute imagery and hallucination.'' The total content of thought, imagery and hallucination never exceeds actual experience. Different degrees of exclusion of the sensory receptive function is a fundamental condition for the occurrence of thought, imagery and hallucinations. Patients with injuries or diseases anywhere in the sensory pathway experience hallucinations of the particular element of sensation, of which they have been deprived.

The author proceeds to discuss the mechanism of the epileptic seizure, of the different stages of sleep and of the state of attention. He holds that these phenomena furnish the clue to some of the conditions which underlie the mental functions of thought, imagery and hallucination. A wave of disability passing back and forth along the cerebral cortical reflex pathway is felt to be the underlying mechanism of each of these phenomena. In

the epileptic seizure the disability of the first, receptive portion of the nerve pathway accounts for the disorientation. The concomitant activation of the second portion, the association system, accounts for the hallucinations. As the wave progresses along the pathway, it leads at first to activation of the efferent portion (convulsions) and later to extinction of the function of the efferent portion (muscular flaccidity). The recovery following the epileptic seizure is marked by the same stages in reverse order from the onset.

Each state of attention, similarly, is the result of a wave of partial extinction of function, which sweeps along the nerve pathway in the normal direction of nerve conduction. If the wave recedes after reaching the association system, as is the case in the ordinary rhythm of consciousness, the person is soon ready for another state of attention; if, however, the wave proceeds further towards the efferent portion, the result is sleep. The second stage of attention is characterized by a narrowing of the scope of attention on a few thoughts. The relations of the elements of memory, deprived of guidance by the sensory receptors, become faulty. Thus thought merges into imagery and finally into hallucination.

An excellent chapter is devoted to the causes of sleep and to a discussion of the anatomical and physiological facts concerning regulation and rhythm of sleep. The different stages of sleep again correspond to a wave of partial disability sweeping along the nerve pathway. The stages are: (1) Diminution of sensory activity, disintegration of memories; activation of thought. (2) Merging of thought into imagery. (3) Partial cession of sensory activity hallucinations. (4) Complete cessation of activity of the sensory pathway. (5) Muscular flaccidity. In awakening, the several stages of sleep are reversed.

The difficult material is excellently arranged and presented by the author. The definitions are brief and clear. Each chapter ends with a concise and systematic summary of the important facts and with a thorough reference list. The theoretical statements are supported by very well selected practical examples, by illustrative case histories and by experimental evidence including experiments conducted by the author on himself. The limitations of our present knowledge are well recognized, no claim is made for definiteness and perfection, and unsolved problems are raised with the intention to stimulate further investigation.

A few critical suggestions about this very fine book may be permitted. There are a few unnecessary repetitions, there are too wide excursions into the fields of neuroanatomy and physiology, and there is a too-detailed description of some well-known clinical syndromes and facts. Since this is a book for physicians, these presentations could have been simplified by greater conciseness and some omissions. The entire first part of the book

(152 pages) serves more or less as an introduction, and only the second part deals with the mechanisms. The book, as a matter of fact, contains more than its title would indicate. A broader subtitle might, therefore, be considered in future editions. The book is attractively printed and bound. Italics are used to stress important statements. Very good drawings and illustrations are scattered throughout the text. The index is complete. To read this work was a pleasure and a stimulus to this reviewer. The book is warmly recommended.

The Open Mind: Elmer Ernest Southard. By FREDERICK P. GAY. Normandie House, Chicago, 1938. 289 pages. Price $5.00.

This is the story of a self-diagnosed hypomanic in whom mayhap oral traits produced a predilection for etymology and an extraordinary language facility, whose drive in at least ten fields was prodigious and productive, and whose personality was charming. It may be stated too that this man was plagued by chronic pituitary headache throughout the majority of his 43 years and withal was held to have had an intellect superior in his generation.

The story is told well by a life-long friend, with admirable restraint considering the color inherent in the personality of his hero. The writer, who is a bacteriologist, draws upon a wealth of documentation from eminent associates of Southard in evaluating the latter's considerable place in psychiatry. He falls into some usual errors, though; for instance, in the opinion that alcoholism is rather a social than a medical malady. More difficulty is experienced in his exposition of Southard's attitude toward psychoanalysis although the author well emphasizes that, characteristic of his openmindedness, Southard early provided opportunities for study in this field. Parenthetically the reviewer may mention the current violent partisanship of certain associates of that period on this same subject.

The biography is compiled from many sources, chief among these a series of letters which point the unfolding story graphically. That it is complete is attested to by the inclusion of a pathological report by Southard's assistant, upon the brains of Southard and his parents. The work is introduced ably by Roscoe Pound.

The stature of Southard may be sketched briefly in a bare recital of some of his accomplishments. He was the first Bullard professor of neuropathology in Harvard University and retained the supervision of the pathological laboratories of the Massachusetts state hospitals throughout his career. Likewise he was first director of the Boston Psychopathic Hospital. That, he made a hospital for acute disease, a research center, and a training school for psychiatrists and workers in allied fields. He referred to himself as a

catalyzer of research, and was adept at cutting red tape in securing provisions therefor.

Because of this latter quality and his dynamic viewpoint the book should be mandatory reading for all institutional psychiatrists.

The transformation from neuropathologist to psychiatrist without formal training is an interesting one. None the less, he was rated an intuitive, able clinician, and a sparkling teacher. Ample evidence of his stimulation of his students and his procurement of their advancement is brought forward: During his 19 productive years he published 180 scientific contributions. Gray contends, however, that he was not an organicist despite his derivation, and makes reference to his sound training and sustained interest in psychology and philosophy. The influence of William James, whose pupil he was, is traced throughout his life. That he conducted a formal course and seminary (seminar?) in psychopathology at Cambridge is still another tangible evidence of his versatility. In this connection a quotation from Southard is provocative: "It is doubtful if any first class mind has ever devoted itself wholly to the study of psychiatry."

As is well known, he made substantial contributions to the knowledge of neurosyphilis, schizophrenia, psychiatric methodology and classification, and shell shock, and that he initiated an investigation of "hypophrenia," still in progress. His papers on mental hygiene matched his brilliant public addresses. Much of his thought thereon has been compiled in the volume "The Kingdom of Evils," a classification of social difficulties, and his orientation of the child guidance program has not been properly recognized.

It may be observed that he reported on family care in 1912, that he recognized the needs for psychiatric experience in the training of nurses, and for general experience in the psychiatric nurse's course, and that he was a prime moving force in the establishment of the Smith College Training School for Psychiatric Social Work. He was interested in the mental hygiene of industry, and craftily attacked it from the proper position. The reemployment of patients, and the establishment of a "halfway house" for convalescence under supervision with occupational training, were further projected plans.

As example of his writing style and his wit, one might point to the title of a paper intended to emphasize the inseparability of psychopathology and neuropathology: "Mind Twist Versus Brain Spot." Again, the following characterizes a patient in the "Kingdom of Evils":

> More a pest than a patient; immigrant and pathetic nuisance; high grade moron, football of environment; so-called little fiend, quite amenable; morbid altruist; moron, divorcee, devoted mother; mystery girl, hysterical; and, one enraged by the vindictive ticking of the clock.

This mind, chafing in brief army service, was almost destined to coin "elaphodosis" for "passing the buck." His conversation, because of his intellect, erudition, free-flowing associations, wit and philological background, is described by many as stimulating, or fatiguing, or incomprehensible, depending upon the mental equipment of the hearer. That he was a chess player of some renown and that he wrote free verse are not surprising.

An early letter shows him to have been preoccupied with the technique of becoming a great man. The course of his life clearly substantiates his avowal that such striving was unselfish and merely a means of securing facilities and authority for research and other projects he felt were imperative. The tragedy of his early passing was primary only to the fact that his long-cherished plan for a psychiatric institute under his direction was just coming to fruition, at the time of his death.

The story of this brilliant, productive and colorful personality makes excellent reading. For the clinician it provides historical material, orientation and, in the long list of Southard's uncompleted projects, valuable research clues. Finally, Gray's biography of Southard should prove inspirational in the full sense of the word, to all in the psychiatric field.

Frustration and Aggression. By JOHN DOLLARD, et al. Published for the Institute of Human Relations by the Yale University Press, New Haven, 1939. 190 pages, references and index. Price $2.00.

The Institute of Human Relations at New Haven continues to shed more light on a variety of problems. A feature of its studies, their thoroughness, characterizes the present publication as it did Criteria for the Life History. The approach is toward a broad horizon, encompassing social as well as individual aspects of the behavior involved. Microscopically, in the opening chapter, the authors lay the groundwork with an investigation of the tides of frustration and aggression surging within the little boy responding to the bell of the ice cream vendor; macroscopically, they view the ebb and flow of interracial feeling that lends such color to contemporary news dispatches from the old world; the latter in a chapter entitled "Democracy, Fascism, Communism." Scanning the field between these two extremes of magnitude, these collaborators have taken apart the frustrations and aggressions that beset this too, too mortal flesh, and put them together again in a synthesis that would leave little to be said were there fewer contradictions of and variations on the main theme.

Establishing markers and guideposts for later considerations, Chapter I, "Definitions," presents to the reader the terms "goal-response" and "frustration-produced instigation." Typically frustrating situations are described in order to give a partial introduction to the general problem. Much

of the italicized material struck the reviewer as axiomatic and perhaps unnecessary to state, but the pall of the platitude is lifted in the copious discussion that follows such statements as: *the strength of inhibition varies positively with the amount of punishment anticipated to be the consequence of that act.*

In later chapters frustration is seen as a pervading influence in personality formation on several planes. The maturing individual is shown as being under pains to adapt to succeeding levels, when he must conform to type in age grading ("growing up"), school (involving many new arbitrary habits), sex ("sissy"—"tomboy"), feeding and cleanliness training, among others.

The *substitute response* is recognized as playing an important role in the frustration-aggression sequence: "Reduction of instigation may result from the occurrence of a goal-response to some more or less discrete element of the total instigation, as when a person lights a cigarette or drinks a glass of water while awaiting a delayed luncheon." In application to the larger field of social relations the following definition of aggression sheds light: ". . . that response which follows frustration, reduces only the secondary, frustration-produced instigation, and leaves the strength of the original instigation unaffected . . . it is *an act whose goal-response is injury to an organism* . . ."—or organism-surrogate, as in Nazi treatment of Jews, who displace alleged frustrating powers inhibiting progress and aggrandizement of the German state.

Complications arising from conflicting investigators are illustrated in a chapter on the Ashanti of West Africa. In this group we see rigidly set up taboos and other regulations of behavior, whereby much aggression is accumulated through the frustration of many goal-responses; here, as indeed in more civilized groups, the outlet is through the cultivation of extreme hostilities toward "out-groups." However, some in-group aggressions are allowed when they are consistent with group welfare, as in the treatment of bed-wetters, in which instance children who are nonbed-wetters are formed into a group which ostracizes in a well-prescribed ritual the recalcitrant ones (the performance includes the chanting of a ditty and pointing the finger of shame).

This absorbing material warrants the attention of all students of behavior. Dollard and his associates (Leonard W. Doob, Neal E. Miller, O. H. Mowrer and Robert R. Sears), play no favorites in the field of theoretical psychology, drawing as they do upon such strange bedfellows as McDougall, Freud, Sumner and Marx. The book will be read with profit.

Interneships and Residencies in New York City, 1934-1937; Their Place in Medical Education. The Commonwealth Fund, New York. 1938. 492 pages. Price $2.50.

This bulky volume is the report of the New York committee on the study of hospital interneships and residencies. It surveys the field of available opportunities for advanced medical instruction in the five boroughs of Greater New York. The committee, composed of 12 representatives of leading hospitals and medical schools, was organized in 1934 under the chairmanship of the late Dr. John Wyckoff to study and compare the character and quality of instruction available in the 182 hospitals offering postgraduate hospital training. These comprised 77 hospitals already approved by the Council on Medical Education and 105 which had not been approved.

Some of the reasons why a number of hospitals were not approved are of interest. The reviewer has publicly stated on several occasions that the hospital not interested in clinical teaching soon stagnates. He finds this opinion supported by the report where it is stated: "Loss of educational contact, not only with the colleges but with other hospitals as well, has resulted in a tendency towards provincialism of viewpoint, unprogressiveness and actual stagnation."

The sources from which internes are drawn presents some surprising figures. Sixty-five of the 77 American schools listed by the Council on Medical Education, 7 of the 10 Canadian colleges and 31 foreign were represented on the staffs of the New York City hospitals when the survey was made.

A number of important topics are discussed. This adds to the interest and value of the study. One such is the preparation of medical records by internes and residents; the supervision to be given by older physicians and the final responsibility of the medical librarian for completion and approved nomenclature. The vexatious topic of ambulance surgeon is taken up and settled in favor of some other arrangement than exacting this service of internes. The conclusion is wise; the experience is of little value to the novice to whom it is usually assigned; his contact with emergency cases in this way is superficial and temporary and the time could be spent in emergency wards where the work can be done more leisurely and under supervision.

This book should be on the shelves of every hospital and medical library. Its reading by members of medical boards would result in benefit to the institutions which they serve.

Psychology and the Nurse. By FRANK J. O'HARA, C. S. C., Ph.D. W. B. Saunders Company, Philadelphia, 1938. 252 pages, with index. Price $1.75.

The author has presented his book to the student who has had no previous study of the subject. To the beginner the most commendable features are its simple definition; the diagramatic representations of structures of the reacting mechanism of the nervous system; the stimulating questions at the end of each chapter which should produce original thinking and new judgments as well as the review questions pertinent to the book's content; the summaries which aid the student in sifting and essentials; the incorporation of references and sources.

The book offers only the general principles found in any of the beginner's psychology books of today, with no emphasis on any particular school of thought. Verbal quibbling and a large mass of technical words have been omitted. Thus O'Hara furnishes the student material that is of practical use rather than the abstractions that so frequently confuse them.

The glossary should be omitted; because of its inadequate statements it has no real value for the student.

NOTES

—Dr. Horatio M. Pollock, director of mental hygiene statistics of the Department of Mental Hygiene, attended the Pan-American Neuropsychiatric Conference at Lima, Peru, March 20-25. He was one of the delegates chosen by President Roosevelt to represent the United States.

—The 76th Congress has enacted legislation (H. R. 2320) which provides "domiciliary care, medical and hospital treatment, and burial benefits to certain veterans of the Spanish-American War, the Philippine Insurrection and the Boxer Rebellion." The act involves amendment of legislation in effect since March 19, 1933, so as to include the foregoing classes of veterans; it was approved May 3, 1939.

—Dr. Richard H. Hutchings retired from the superintendency of the Utica State Hospital the last day of June this year. His retirement brought to a close a State hospital career which began May 24, 1892, at Ogdensburg and which, in its span of over 47 years includes 36 years as superintendent, first at St. Lawrence State Hospital, then since 1919 at Utica State Hospital. The editorial board announces the dedication of the next (October) issue to Dr. Hutchings; it will be known as the "Richard H. Hutchings Number." Biographical material is reserved for that issue.

—The New York State Department of Mental Hygiene offers to qualified graduate nurses a course of eight months in psychiatric nursing at the New York State Psychiatric Institute and Hospital, at Presbyterian-Columbia Medical Center, New York City. Nurses who have had three to four months of affiliation are given preference. Board and laundry services are provided during the course. For further information, address: Director of Nursing, N. Y. State Psychiatric Institute and Hospital, 722 West 168th Street, New York, N. Y.

—The University of Wisconsin Medical School is to conduct an Institute for the Consideration of the Blood and Blood-Forming Organs, at the medical school, Madison, Wis., September 4-6, 1939. The program will include papers and round-table discussions by European and American workers in the field of hematology. Physicians and others who are interested are cordially invited. A detailed program may be obtained by addressing Dr. Ovid O. Meyer, Chairman, Program Committee, University of Wisconsin Medical School, Madison, Wis.

—The Medical Society of St. Elizabeths Hospital, Washington, D. C., held its second annual meeting April 14, 1939. Members and their guests were entertained at luncheon at their apartment by the superintendent, Dr. Winfred Overholser, and Mrs. Overholser. Dr. Solomon Katzenelbogen was chairman of the scientific session conducted at Hitchcock Hall in the afternoon. Contributors included James M. Cunningham, M. D., Bruce B. Robinson, M. D., Winifred Richmond, Ph.D., Walter Freeman, M. D., Ernest E. Hadley, M. D., Harry Stack Sullivan, M. D., and Nolan D. C. Lewis, M. D. At the Kennedy-Warren Hotel in the evening, the annual dinner was held, at which guests heard an address by C. Macfie Campbell, M. D.

—The PSYCHIATRIC QUARTERLY is pleased to announce that it has established exchange relations with two journals in its field that have made their initial appearances since January, 1938.

Psychiatry, published by the William Alanson White Foundation, and issuing its first number in February, 1938, is subtitled "Journal of the Biology and the Pathology of Interpersonal Relations." Its format is attractive, and it presents a two-column page which is eminently readable. On the publications committee of the foundation, which comprises the editorial board, are listed Drs. Thomas Harvey Gill, Ernest E. Hadley and Harry Stack Sullivan. The journal appears quarterly.

Psychosomatic Medicine, also in two-column format, is a quarterly published under the sponsorship of the committee on problems of neurotic behavior, division of anthropology and psychology, of the National Research Council, Washington, D. C. Its managing editor is H. Flanders Dunbar, M. D., who has for her associates Drs. Franz Alexander, Dana W. Atchley, Hallowell Davis, Clark L. Hull, Howard S. Liddell and Grover F. Powers.

Both these periodicals are welcomed to the field. Each has its peculiar contribution to make and each should enjoy a large following.

—Appearing in the March Quarterly Bulletin of the Managing Officers' Association of the Ohio Department of Public Welfare, the survey recently conducted by a committee on the medical staffs of Ohio's mental hospitals pointed to the need for higher remuneration of physicians in the mental hospitals of that state. It is also pointed out that great difficulty is being experienced in securing desirable physicians for the staffs of these institutions through lack of adequate living accommodations. The report concludes: "It is the belief of your Committee that if the medical standards of the Ohio state hospitals are increased to a level to be determined by the Director of Public Welfare, the Commissioner of Mental Diseases and the medical superintendents of the mental hospitals, with adequate salaries

paid and satisfactory rooming facilities provided for the medical officers, it will not only result in the type of medical care and treatment to which the patients are entitled, but this greatly improved service and (these) added emoluments will attract a greater number of physicians and will hold in the service the most capable, progressive and desirable type of physician, thereby resulting in a much larger percentage of recoveries and discharges and a very substantial depletion in the patient population of our state hospitals.—O. O. Fordyce, M. D., Chairman of the Committee."

—On April 29, 1939, Dr. David Ruslander, senior assistant physician at the Buffalo State Hospital, died after a short illness from scarlet fever. Born in Buffalo, N. Y., in 1906, he obtained his education in that city, and graduated from the University of Buffalo School of Medicine in 1929 with the degree of B. S., and M. D. He served his internship at the Sister of Charity Hospital, Buffalo; subsequently he was a member of the E. J. Meyer Memorial Hospital staff, and engaged in private practice.

He was appointed assistant physician at the Buffalo State Hospital on February 1, 1932, and in 1935 he was promoted to senior assistant physician. In that year also he attended the graduate course in neurology and psychiatry at the Psychiatric Institute in New York City. In December, 1936, he was chosen to receive instruction in insulin therapy at Harlem Valley State Hospital under the supervision of its originator, Dr. Manfred Sakel. He organized the insulin as well as metrazol therapy of schizophrenia at the Buffalo State Hospital, and was instrumental in teaching the technique to physicians and nurses in western New York. Several articles by him on this treatment have appeared in the PSYCHIATRIC QUARTERLY and other publications.

In 1938 he married Ann Aber of Buffalo. He is survived also by his father, Lester Ruslander, his stepmother, two brothers and two sisters.

He was a member of the American Psychiatric Association, Buffalo Neuropsychiatric Society, Buffalo Academy of Medicine, Erie County Medical Society, Maimonides Medical Club, and the Omega Alpha Tau Fraternity.

By his passing there is lost to the medical profession and the New York State Department of Mental Hygiene a psychiatrist of unusual promise. His coworkers and friends will remember his genial, ever-cooperative personality. Those who came under his influence as a teacher, both laymen and professionals, will not soon forget his eagerness to give without stint of his knowledge of psychiatry and mental hygiene. His patients will recall his genuine interest in their problems and his untiring efforts in their behalf. His family mourns a dutiful member of whom it was justly proud, but it is hoped that it is comforted by the knowledge that his brief span of life was inversely proportionate to its rich usefulness.

—Early in April the board of directors of the National Committee for Mental Hygiene announced the appointment of Dr. George S. Stevenson as medical director, to succeed Dr. Clarence M. Hincks, who asked to be relieved in order to give more time to the work of the National Committee for Mental Hygiene of Canada, of which he is the founder and general director.

Dr. Hincks has served as general director of the national committee since 1931, and has guided it through eight difficult years in which it has not only continued its basic activities but has initiated a number of new and fundamental activities. His record of achievement testifies to his vision and enterprise and his effective spokesmanship in developing the field, enlarging the interests of the organization, multiplying its contacts and leaving it greatly strengthened as it rounds out its third decade of work.

Dr. Stevenson is exceptionally equipped for his new position. A graduate of Johns Hopkins Medical School, he served his psychiatric apprenticeship at Henry Phipps Psychiatric Clinic. After holding important posts at Cornell Medical School, University of Minnesota State Clinic and Minneapolis General Hospital, he joined the national committee in 1926 as field consultant for the division on community clinics; in 1927 he became director of this division. The child guidance clinic movement in this country saw its greatest development during his 13 years of service in the field, the number of clinics growing from a mere handful to over six hundred in this time. This work will continue under the direction of Dr. Stevenson.

Dr. Stevenson has been secretary and president of the American Orthopsychiatric Association. He is chairman of the New York City Committee for Mental Hygiene of the State Charities Aid Association, member of the executive committee of the Society for Research in Child Development, member of the executive committee of the National Conference of Social Work, and of various other mental hygiene committees. At its recent meeting in Chicago, the American Psychiatric Association chose him as president-elect; he is also a member of the American Association on Mental Deficiency. Quoting from a letter written to Clifford Beers by Adolf Meyer, "Nobody knows as he does what is actively at work in this country and nobody has done as much as he to bring and keep together and to promote the interests and performance of basic work and coordination of efforts. He will have the fullest support and respect of all those who have followed his career and know the solid and effective character of his work and the man."